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REVIEW OF FIVE HUNDRED AND THIRTY-FOUR OPERATIONS ON THE MAMMARY GLAND*

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There are two important epochs in the surgical history of mammary carcinoma. The modern operation, based on the knowledge of the lymph-vascular drainage of the breast, has raised the percentage of ultimate cures, as the introduction of antiseptics and asepsis lowered its primary mortality. This is the more remarkable in view of the extensive operation now performed, so that the reduction of the primary mortality of 25 per cent. in preantiseptic days to less than 1 per cent. with modern technic is approximately parallel to the reduction in local recurrences from 65.6 per cent. to 6.5 per cent. Elaboration of Halsted's principles has carried the operative incision further and further away from the primary focus of disease until the limits of surgery must surely have been reached, with results that are highly disappointing save when compared with results of past decades. Why must the ultimate cancer be sought for in remote tissues of cervical, thoracic and abdominal areas, and usually in vain, when it is the consensus of medical opinion that cancer is primarily a local disease, often, perhaps always, preceded by a precancerous state of the tissues, and invariably amenable as such to surgical treatment? To whom can we turn for explanation of the inoperability of 25 per cent. of the cases in patients presenting themselves to the Mayo clinic, of the inoperability of 32 per cent. of cases of superficial malignancy seen by the surgeons of Pennsylvania in 1911, or of the presence of extensive ulceration and metastasis in thirty-one of the last 200 cases at the German Hospital clinic? Is it the memory of an ancient teaching that prompts physicians to advise the patients to accept operative treatment as a last resort in mammary carcinoma, when this lapse of time has removed its only chance of cure? Or has surgical practice in accepting advanced cases for operation cast an opprobrium on its methods, established a wide-spread belief in their futility and deepened the conviction that operation is to be accepted only when this very skepticism has rendered it useless? Is it the ignorance of the laity in regard to the serious nature of lumps, whether painful or not? Or is it the apathy of the practitioner, or overconfidence in his ability to differentiate the benign from the malignant in its early undifferentiable stages? No doubt a number of factors are potent in the production of this evil, while the fact remains that surgeons see large numbers of inoperable cases of cancer of both superficial and deep origin, the great majority of which could have been cured if diagnosed early and treated properly.

Since 1898, 534 patients have been operated on in the German Hospital clinic for tumor of the breast, as follows: carcinoma, 370; fibro-epithelial, 123; chronic mastitis, 24; sarcoma, 11; tuberculosis, 6. An analysis of the last 200 cases of carcinoma and 100 cases of fibro-epithelial tumors of which the records are complete, with the end-results of all cases which we are able to trace, forms the material from which the statistics to follow are computed.

INCIDENCE OF CANCER AND THE PRECANCEROUS TISSUE STATE

The statistics of all countries show a steady increase in the incidence of cancer. In New Zealand, which has the lowest death-rate from cancer, there is a steady increase, proportionate, as shown by Hislop and Fenwick,[1] to the increase of other countries. The death-rate in the United States had risen from 47.9 per hundred thousand in 1890 to 73 per hundred thousand in 1907, almost the same average increase during the same period as occurred in eight European countries. The international classification of the cause of death attributes 8.5 of the deaths from cancer to mammary involvement. Estimated from this, 5,882 of the persons dying from cancer in the United States during the year 1907 had primary involvement of the breast.

Coincident with this increase in the incidence of cancer, there has been a steady increase in our knowledge of the predisposing states of the tissues to malignant degeneration, and in a measure of their underlying cause. Keen's demonstration, twenty years ago, of the degeneration of pigmented moles into carcinoma, foreshadowed the general recognition of certain connective-tissue changes predisposing to malignancy. Victor Bonney believes that cancer cannot originate from epithelium lying on healthy connective tissue. He states that destruction of the elastic tissue fibers of the basement membrane is the initial step toward malignancy, a result produced in the majority of cases of cancer of the breast by chronic cystic mastitis, especially of the proliferative type. As causative of this type of mastitis, Handley[2] mentions "(*a*) infection via the ducts; (*b*) toxic products of metabolism; (*c*) a morbid deviation in the physiologic process of involution and evolution which normally occurs with the sexual crises, puberty, menstruation, lactation, pregnancy and the menopause." Beadles found this condition in the non-cancerous portions of a hundred specimens of carcinomatous breast, and shares the opinion of E. T. Paul and Victor Bonney[3] that it is

* Read before the College of Physicians of Philadelphia, Dec. 3, 1912.

1. Hislop and Fenwick: Ann. Surg., 1907.
2. Handley, Practitioner, London, 1910, lxxxiv, 463; Diseases of Breast, London, 1909.
3. Greenough, Simons and Bonney: Ann. Surg., 1907.

in constant association with early mammary carcinoma. Its absence in the late stages they ascribe to overgrowth of the cancer elements. From clinical evidence, Handley estimates the percentage of antecedent mastitis as 30 per cent., comparable with the 39 per cent. of superficial cancers, in the report of the Pennsylvania Cancer Commission, giving a history of chronic irritative conditions antedating the development of malignancy. MacCarty,[4] Speese,[5] Bloodgood, Judd[6] and others associate chronic mastitis with carcinoma in from 25 to 75 per cent. of cases.

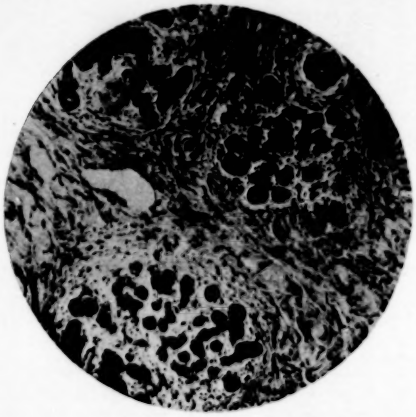

Fig. 1.—Fibro-adenoma of the breast.

Benign tumors are said to constitute 11 per cent. of all breast tumors, of which 7 per cent. are of the fibro-epithelial type. This estimation is perhaps true when based on hospital statistics, but benignancy is in much greater proportion in early stages. According to Judd, from 30 to 35 per cent. of benign tumors of the breast suffer malignant degeneration. In one of our cases a small tumor was excised from the left breast and diagnosed "fibro-adenoma" microscopically. Figure 1 shows the appearance of the primary growth. The patient returned in six months with extensive carcinoma. Figure 2 shows carcinoma in the scar from the original operation, while this case illustrates a clinical and pathologic mistake, it seems to emphasize the important fact that a growth may appear clinically and pathologically benign when already in a small area malignant transformation has taken place.

The influence of trauma, whether of transient nature or long-continued irritation, is much disputed. Of 115 authors writing in the years 1901 to 1909 inclusive, thirty did not assign trauma as a cause of cancer. Phelps states that only 9 per cent. of authors since the middle of the last century believed that transient injury might be the cause of malignant change. In 13 per cent. of our cases a definite history of injury, usually transient in nature, was given.

In one instance bleeding from the nipple, said to be of traumatic origin, recurred at irregular intervals for one year before the clinical evidence of malignancy appeared. Williams states that 25 per cent. of 137 cases gave a history of trauma, and that in one in one thousand cases the cancer immediately followed the receipt of the trauma. With increased knowledge of precancerous tissue states, the ascribed influence of bacterial and traumatic inflammation has a more rational basis. Nor can the frequent occurrence of the disease in the absence of such influence render it equivocal, for in the light of present knowledge, we must consider trauma, with other causes of inflammation, as a factor predisposing to cancer through the destruction of the normal fibro-epithelial relationship.

SYMPTOMS AND DIAGNOSIS

Thirty-seven of the relatives of our patients with malignant growths, and twenty-two of those with benign growths died of cancer, 13 per cent. of each type affecting the breast. Various authors state that in from 5 to 30 per cent. of cases of cancer in which there is operation, a family history is given of the disease, usually affecting the breast. The occurrence of mammary carcinoma in four or more members of a family, a history given in two of our cases, would indicate hereditary influence, but this must be considered a developmental predisposition.

As regards sex, the number of males varies from 6 per cent. (Rodman[7]) to 2.82 per cent. (Billroth[8]); 1.5 per cent. of the malignant and 2 per cent. of the benign cases of this series occurred in males. This low percentage is in keeping with the general rule that malig-

Fig. 2.—Carcinomatous recurrence in scar.

nancy rarely affects vestigial structures, of which nature the male breast is to be considered. It also lends weight to the influence of changes incident to function in the female breast in the development of precancerous tissue states. Fibro-epithelial tumors occur at all ages, while no authentic cases of cancer have been observed before puberty. The cases so reported have been, as Billroth believed the case of Birkett in an 8-year-old girl to have been, sarcomatous in nature. Carmichael and Ever-

4. MacCarty: Tr. South. Surg. and Gynec. Assn., 1910.
5. Speese: Ann. Surg., 1910, li, 212.
6. Judd: New York Med. Jour., April 27, 1912.
7. Rodman: Diseases of the Breast, Philadelphia, 1908.
8. Billroth: Cyclop. Obst. and Gynec., ix.

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hard Home reported bilateral carcinoma in patients 12 and 15 years of age. The age incidence in our cases is shown in Table 1. The average age in cancer cases was 49.6 years, and in fibro-epithelioma, 34.5 years.

TABLE 1.—AGE INCIDENCE IN CASES OF CANCER AND FIBRO-EPITHELIOMA AT THE GERMAN HOSPITAL CLINIC

Cancer			Fibro-Epithelial Tumors		
Ages	No. of Cases	Per Cent.	Ages	No. of Cases	Per Cent.
20 to 30	5	2.5	10 to 20	6	6
30 to 40	32	16.0	20 to 30	25	25
40 to 50	65	32.5	30 to 40	32	32
50 to 60	65	32.5	40 to 50	25	25
60 to 70	19	9.5	50 to 60	6	6
70 to 80	14	7.0			

	Years		Years
Youngest female	22	Youngest female	14
Youngest male	25	Youngest male	19
Oldest female	78	Oldest female	61
Oldest male	78	Oldest male	23

MENOPAUSE

	No.	Per Cent.		No.	Per Cent.
Before	95	47.5	Before	91	91
After	75	36.5	After	7	7
Males	3	1.5	Males	2	2
No record	29	14.5			

MARITAL

	No.	Per Cent.		No.	Per Cent.
Single	34	17.0	Single	49	49
Married	163	81.5	Married	49	49
Males	3	1.5	Males	2	2

PARITY

	No.	Per Cent.		No.	Per Cent.
Parous	110	55	Parous	24	24
Nulliparous	90	45	Nulliparous	75	76

DIAGNOSIS

When a positive diagnosis of mammary carcinoma can be made, the hope of operative cure is often in vain, for the classical signs are usually unmistakable evidence of extensive metastasis. Mistakes in the clinical diagnosis in advanced cases are constantly made, however, especially in young subjects, as Hort[9] has shown. In a series of 300 cases occurring before the twenty-fifth year of life, Hort states that 128 were not diagnosed clinically, and further, that 582 of 3,532 cases at all ages were sent to the London hospitals with wrong diagnoses. In the early malignant changes of primary benign breast tumors, and in carcinoma arising *de novo*, it is as impossible to diagnose the condition as in the early analogous changes in the base of a chronic gastric ulcer. The reproach to him who fails to recognize obvious cancer is no greater than that of the physician who waits for obvious signs. A small minority of cases progress insidiously to extensive dissemination in the absence of symptoms. One of our patients was sent to the hospital on account of severe upper abdominal pain. Examination showed extensive involvement of the liver, metastatic from a small nodule in the breast (right) of which the patient had been entirely unaware. Two patients first noticed nodules in the axilla and had never suspected any trouble with the breast. In the great majority of cases the disease runs a symptomless course in its early stages, and the first suggestion of trouble comes with the accidental discovery of a "lump" in the breast. I believe that immediate radical operation at this time would give a much larger percentage of cures.

The initial symptoms in this series were as given in Table 2. These statistics refute the assertion of Billroth[4] that the initial symptom of mammary cancer is "lancinating pain which sometimes precedes the palpable induration by months." The disease in one of the cases in this series continued to extensive ulceration in the entire absence of pain. This symptom is common, however, in the late stages. In 65 per cent. of the malignant cases and 25 per cent. of the fibro-epithelial type the patients suffered pain from several months to several years after the discovery of the tumor. The pain has been described as slight, moderately severe or excessive, of a sticking, drawing, aching and burning character, knife-like and shooting into the arm, axilla, neck, abdomen or chest and in several instances was complained of as affecting only the axilla and abdomen. Trauma, infectious diseases, the menstrual periods and damp weather were given as influential in its production. As a symptom in the late stages, pain may be general, affecting especially the extremities and due either to toxemia, wide-spread metastasis, or both. In early malignancy of the breast, pain must be considered a rare symptom. Occurring late in the disease, it is the language of reproach to the patient for concealing her malady, to the physician for ill advice, or to the surgeon for delay in operating.

TABLE 2.—INITIAL SYMPTOMS IN CASES OF CANCER AND FIBRO-EPITHELIOMA AT THE GERMAN HOSPITAL CLINIC

Cancer			Fibro-Epithelial Tumors		
Symptoms	No. of Cases	Per Cent.	Symptoms	No. of Cases	Per Cent.
Lump	156	78.0			
Pain	18	9.0	Lump (multiple, 5; bilateral, 3)	86	86
Eczema of nipple	3	1.5			
Bleeding from nipple	2	1.0			
Ulcer of nipple	3	1.5			
Soreness of nipple	3	1.5	Pain (spontaneous, 7; at menstrual periods, 1; after trauma, 2)	10	10
Retraction nipple	2	1.0			
Serous discharge from nipple	1	0.5			
Increase in size of breast	2	1.0	Aching	1	1
Lump in axilla	2	1.0			
Stinging sensation	2	1.0			
Tender axilla	1	.05			
Dimpling of skin	2	1.0	Burning	1	1
Sinus	1	0.5	Tender at the menstrual periods	2	2
Pigmented mole	1	0.5			
Pain in upper right abdomen	1	0.5			

PHYSICAL SIGNS

The opportune time for surgery in mammary carcinoma is in the presence of a symptomless, freely movable mass. That patients are rarely seen in this stage of the disease is indicated by the tabulation of physical signs in our cases (Table 3).

TABLE 3.—PHYSICAL SIGNS IN CASES OF CANCER AND FIBRO-EPITHELIOMA AT THE GERMAN HOSPITAL CLINIC

PHYSICAL SIGNS

Cancer		Fibro-Epithelial Tumors	
Right side	94	Right side	51
Left side	95	Left side	46
Bilateral	11	Bilateral	3

In eleven of the benign cases there had been previous operations on the other breast, in four instances for carcinoma.

MOBILITY (ON CHEST WALL)

Movable	157	Movable	99
Fixed	43	Fixed	1

SKIN INVOLVEMENT

Skin involved	141	Skin involved	3
Skin not involved	59	Skin not involved	97

RETRACTION OF THE NIPPLE

Retraction	107	Retrac. (1 congenital)	5
Not retracted	93	No retraction	95

DISCHARGE FROM NIPPLE

Discharge	6	Discharge	1
No discharge	194	No discharge	99

ULCERATION

Ulceration	31	Ulceration	1
No ulceration	169	No ulceration	99
One showing ulceration, bilateral.		Both sides involved.	

INVOLVEMENT OF THE AXILLARY LYMPH-NODES

Palpable	74	Palpable	9
Non-palpable	126	Non-palpable	91

Thirteen of the seventy-four palpable enlargements non-cancerous. The nine palpable cases proved non-cancerous microscopically.

9. Hort: Brit. Med. Jour., 1909, ii, 966.

In no case of this series were the lymph-nodes of the opposite axilla or of the supraclavicular spaces palpably enlarged. Without considering general symptoms at length, we would draw attention to the frequent occurrence of a gain in weight of women with cancer of the breast, incidental to metabolic changes with the menopause.

LOCATION

Fibro-epithelial tumors are said to involve the sternal half of the breast most frequently. In this series, as indicated by Figures 3 and 4 (diagram) both malignant and benign types of tumor were most frequently found in the upper and outer portions of the breast.

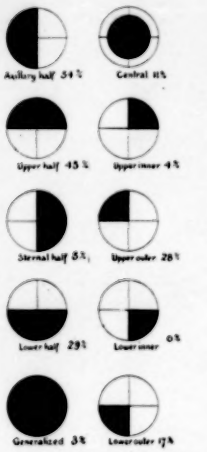

Fig. 3.—Diagram to illustrate areas involved in fibro-epithelial tumors of the breast. Percentages estimated from cases of 100 consecutive patients operated on in the German Hospital.

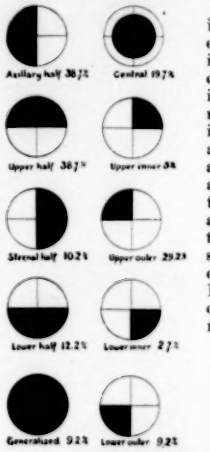

Fig. 4.—Diagram to illustrate areas involved in carcinoma of the breast. Percentage estimated from cases of 200 consecutive patients operated on in the German Hospital.

METASTASIS

Palpably enlarged axillary or supraclavicular lymph-nodes in the presence of a mammary growth do not necessarily mean carcinomatous involvement. In both chronic cystic mastitis and cancer, these nodes undergo certain changes affecting especially their germinal centers, and leading to hypertrophy, which has been styled the pre-cancerous adenopathy. Palpable axillary nodes were noted in nine of our benign cases and proved free of malignant change by microscopic examination. Finsterer found the same condition seven times in sixty-four cases of benign neoplasms.

The microscope proved the absence of metastasis in 6.5 per cent. of the 37 per cent. of malignant cases in which axillary enlargement was found by palpation, although in 62 per cent. of the cases metastasis to these nodes was found microscopically. Bull stated that 65 per cent. of cases when seen by the surgeon have palpable axillary lymph-nodes. Halsted[10] reported two cases of mammary carcinoma in which the axillary enlargement in one instance preceded the development of, and in the other progressed in the entire absence of any demonstrable mammary neoplasm. The two similar cases in this series had definite growths in the breast when the axillary masses were discovered, although the patients were unaware of their presence.

Looking with Halsted on metastasis as "the centrifugal spreading of a growth in direct continuity with the primary focus," the axillary enlargement in the latter type of Halsted's cases must be proved separate from a small primary focus in the axillary extension of breast tissue, called by Stiles "the axillary tail."

In a number of cases the neoplasm involved the upper inner quadrant of the breast; and I believe that the entire freedom of lower cervical lymphatic involvement in this series would not have been noted if the lymph channel, described by Poirier and Cuneo, were effective in draining this area. Nor does the freedom of attachment of the tumor to the pectoral fascia indicate non-involvement, for not only is this fascia involved before adhesion occurs, as Heidenhain showed in 1889, but also both muscles and the intermuscular lymphatics as well, though this is more rare. The same is no doubt true of the digitations of the serratus magnus muscle arising from the fifth and sixth ribs, in involvement of the lower outer quadrant, which overlies them. Henderson[11] failed to show this relationship, and there are no other studies available to indicate such involvement, yet Handley agrees that in cancer of the lower axillary quadrant these digitations should be removed. We removed a metastatic nodule from the tissues over the inferior angle of the scapula on the diseased side (Fig. 5). It was probably metastatic along lymphatics in the fascia covering the latissimus dorsi muscle, from the primary focus in the upper outer quadrant of the breast.

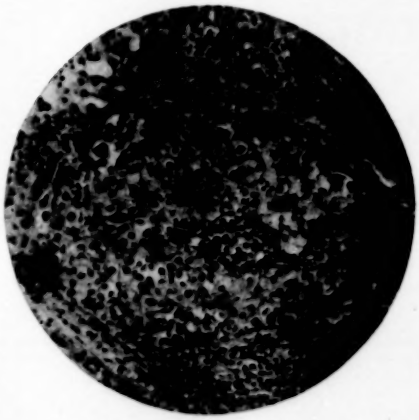

Fig. 5.—Metastatic carcinoma nodule from back.

Liver involvement and the frequent occurrence of cancer deposits in the humerus and thoracic cavity are the result of lymphatic permeation. Blood vascular embolic infection, the possibility of which is sometimes denied, probably explains distant metastases. Metastatic

10. Halsted: Bull. Johns Hopkins Hosp., 1894; Ann. Surg., 1907.

11. Henderson: Brit. Med. Jour., 1909, ii.

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carcinoma to the breast is exceedingly rare, except from its fellow. The same is true of primary bilateral mammary carcinoma.

LATE RECURRENCES

We have noted apparent recurrence twenty years after removal of a cancerous breast. In one case of this series the left breast was removed six years before signs of involvement of the right breast appeared. In another, carcinoma appeared at the site of a vaccination scar three years after amputation of the breast. We resected a malignant jejunum and associated involved lymph-nodes (Fig. 6) in one of the cases of this series, three months before the discovery of a breast tumor. The patient was admitted to the German Hospital in February, 1907, with symptoms of pyloric obstruction, from which she had suffered since September, 1906. At operation an annular carcinoma was found, involving 2½ inches of the jejunum, and situated 8 inches distal from the duodenojejunal flexure. The mesenteric lymph-nodes draining this area were palpably enlarged. The diseased portion of the jejunum was resected and an end-to-end anastomosis made, but insufficient blood-supply necessitated resection of the primary anastomosis. A lateral anastomosis with posterior gastrojejunostomy to its distal side was then performed with satisfactory results. The enlarged lymph-nodes in the immediate area of the resection were removed. The patient recovered promptly, but returned to the clinic in April, 1907, complaining of sharp pain around the nipple of the left breast. This pain came on suddenly five weeks before admission and was associated with a rapidly growing lump in the upper quadrant of the breast. A simple amputation of the breast was performed. The specimen proved to be an adenocarcinoma. The patient writes (Aug. 15, 1912) that she enjoys perfect health.

From another patient we removed a carcinomatous uterus seven years before the radical operation for similar trouble with the breast was performed, but of this case we have no word. Matas has reported local recurrence twenty-four years after excision of the breast. Of thirty-five cases of late recurrence, Rotter found six in the other breast. Most of the so-called late recurrences are new processes without relationship to the previous trouble.

Roentgen irradiation has no place in the treatment of operable carcinoma of the breast. Preoperative application of the rays to remove outlying metastases before operative removal of the primary focus is as useless as local treatment of vesical tuberculosis in the presence of primary renal involvement. As a prophylactic measure against postoperative recurrence, or in cases of local recurrence which on account of the position and extent of the growth or the debilitated state of the patient preclude further operative interference, and in inoperable cases of cancer of the breast, the *x*-ray is the only therapeutic measure of value. Boggs' report[12] of five apparent cures in twenty inoperable cases, with improvement in the remaining cases, lends encouragement to patients with cancer involvement beyond surgical relief; to state the value of Roentgen irradiation in these conditions, in terms of finality, is impossible. Dr. G. E. Pfahler and other eminent roentgenologists recommend the treatment under the circumstances above named, and for this reason patients in the immediate postoperative period, with local recurrence impossible of removal, or with inoperable mammary carcinoma, should have the benefit of their wide experience.

12. Boggs: Am. Quart. Roentgenology, April, 1911.

PROGNOSIS

In the 534 cases of carcinoma and fibro-epithelial tumors in which operations were performed in the German Hospital since 1898, there were three deaths. Endocarditis developed after excision of a small "fibroadenoma"; the other patients died of uremia and pneumonia following the radical operation for carcinoma.

With the radical operation the average primary mortality is approximately 1 per cent. As concerns the possibility of cure in cancer of the breast, the prognosis depends on those factors, including length of time the disease has existed, the age of the patient, type of tumor, etc., which contribute to dissemination of the disease, and from the technical point of view the ability to remove without cancer implantation, the glandular, lymphatic, fascial and muscular tissues involved in the malignant process. The average length of time the disease had existed in this series was thirty months. In the cases giving a family history of cancer 22.9 months had elapsed between the initial symptom and surgical consultation. In the cases in which the patients were well three or more years after radical treatment, sixteen months had elapsed on the average before operation. Freedom from recurrence was obtained equally in cases of long, and those of short duration at the Massachusetts General Hospital; Greenough's tables indicate that bilateral involvement, involved axillary and lower cervical nodes, ulceration and adhesion of the tumor to the skin and chest wall with the medullary type of tumor

Fig. 6.—Adenocarcinoma metastasis in the jejunum.

TABLE 4.—GREENOUGH'S STUDIES ON THE POSSIBILITY OF CURE IN CANCER OF THE BREAST

	No. of Cases	Per Cent. Successful
Tumor adherent to the skin	262	16.0
Skin not involved	71	32.0
Tumors adherent to chest wall	45	11.0
Movable on chest wall	194	21.0
Axillary glands palpable	236	12.0
Axillary glands not palpable	117	19.0
Bilateral involvement	6	*
Ulceration present	60	6.5
Non-ulcerative	316	21.0
Medullary cancer	...	16.0
Scirrhus	...	23.0
Adenocarcinoma	...	47.5

* All fatal.

and in a young subject, offer the most unfavorable prognosis. Of our patients well after three or more years, only 12 per cent. had retraction of the nipple, and 18 per cent. attachment of the tumor to the skin, but in no instance was the tumor attached to the pectoral fascia. Table 4 is reproduced from Greenough's studies. In 376 cases there was recovery and good health after three years in sixty-four, and death after three years from other diseases in seven, giving a total of seventy-one successful operations, or 18.9 per cent. Primary mortality of 416 cases was 3.6 per cent.

Of forty patients with enlarged supraclavicular glands, only two survived; in these two, 52 per cent. of the glands free of cancer (microscopically) remained free of local recurrence. Forty-one patients in 290 cases of recurrent carcinoma lived over three years after operation, and 13 per cent. of these never showed local recurrence. In 1907 Halsted reported 42 per cent. of 210 patients cured after the three-year limit.

In Halsted's early cases two in three patients were cured by the radical operation, while in those with metastases to the axillary nodes, the late cases, three in four patients died of early recurrence. He reports 7 per cent. of cures in forty-four operations with dissection of the supraclavicular space. Of the fifty-nine patients dying of early recurrence in our series, 90.9 per cent. had palpable axillary involvement. Of sixteen living after the three-year limit, 25 per cent. had palpable lymph-nodes in the axilla. The end-results in 119 of our cases are as follows: Of the patients with fibro-epithelial tumors, forty-four have been traced, and of these forty-one have remained well for an average period of six years. Two patients have had operations for similar tumors in the opposite breast, and one case diagnosed as fibro-adenoma both clinically and microscopically had early malignant degeneration of the breast (Figs. 1 and 2) and died of recurrence after radical operation. Sixteen, or 21.3 per cent. of seventy-five cases of carcinoma have passed the three-year limit and are free of recurrence on an average of seven years. Thirty-seven died of recurrence, and four of causes other than cancer. Six others have recurrence at the present time; while the remaining patients are apparently well, but sufficient time has not elapsed to make this certain.

The statistics here presented, although they are meager, serve to indicate in a general way the present status of mammary carcinoma in regard to the prognosis of operative treatment. Approximately one patient in five is permanently relieved of the disease by the radical operation, though it must be confessed that the inability to secure reliable data makes even this percentage questionable. This percentage would probably be materially lessened if the patients with cases pronounced inoperable, whose names do not appear on hospital records, were included in the statistics. As mentioned above, these results are highly disappointing unless compared with the results of past decades. When popular opinion demands immediate operation on the discovery of a lump in the breast; when physicians are taught to think of breast tumors in terms of operability, and when misguided humanitarianism no longer prompts the surgeon to attempt injudicious operations, the present lack of faith in the surgery of this disease will give way to a healthy optimism.

The work on this paper, going over the hospital records, compiling statistics and writing to patients, was done by Dr. Leon Herman, formerly house surgeon to the German Hospital, to whom I wish to acknowledge my indebtedness.

SKIAGRAPHY OF THE SEMINAL DUCTS

WILLIAM T. BELFIELD, M.D.
CHICAGO

Through an incision in the vas deferens just above the testicle (vasotomy), a solution of collargol or other metallic compound can be injected into vas and vesicle,

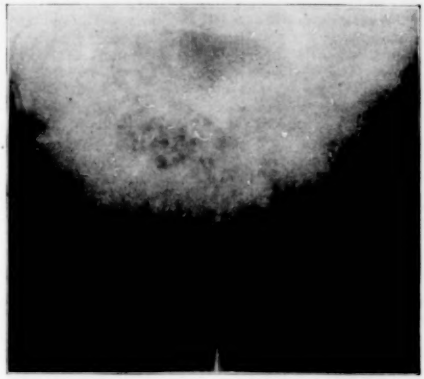

Fig. 1.—Tortuous vas deferens, seminal vesicle, deflected ejaculatory duct. Injected through vasotomy with 15 per cent. collargol solution for chronic vesiculitis. Skiagram by Dr. Van Horn, St. Luke's Hospital, Chicago.

Fig. 2.—Print of a larger area from the same negative, retouched to make the shadow more clear.

and skiagrams made of these. Such pictures amplify our limited knowledge of the physiology and pathology of the vas deferens and seminal vesicle, and of the genital functions of the male.

The strength of the collargol should not exceed from 10 to 15 per cent.; the quantity injected at one sitting

should in general be limited to 4 or 5 c.c.; injection should immediately cease if pain in groin or rectum occurs, since such pain shows irritation of vas or vesicle, sometimes requiring mitigation by morphin. If the vas be occluded by stricture, severe pain may be caused by the injection of even 1 or 2 c.c. Regurgitation of collargol into the connective tissue around the opening in the vas follows overdistention, and causes a tender induration which gradually subsides, usually without suppuration.

If there be no occlusion of the seminal duct, collargol is passed with the urine for days following the injection, and the emitted semen is black—the latter phenomenon inspired in one patient the fear that his future children might be Ethiopians. When the weaker, non-irritating solutions are used at body temperature, the distended vas and vesicle may expel their contents into the urethra and bladder or even out of the meatus, so that a stream of black liquid flows from the syringe of the operator through the entire genital duct, escaping at the meatus. In these cases the opening of the ejaculatory duct into the prostatic urethra can usually be identified through a modern urethroscope, and a filiform bougie be passed into the duct.

By fastening into the vas a flanged silver tube the injection or irrigation may be repeated subsequently at the discretion of the operator.

Among the features revealed by this method are: (1) a peristalsis of ampulla and vesicle into the prostatic urethra, without the phenomena of emission—a function which explains certain obscure clinical phenomena; (2) the sphincteric closure of ampulla and vesicle; (3) the not infrequent occlusion of the ejaculatory duct, converting vas and vesicle into a retention cyst. Elaboration of these and other features exceeds the limits of this preliminary article, which is designed to bring this new means of studying the genital duct to the attention of the profession.

32 North State Street.

TWO UNCOMMON ESOPHAGEAL CASES

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The first case is of interest in showing the length of time that a large and irregular-shaped foreign body can be retained in the esophagus, the conclusions arrived at as to the safest procedure for its removal, and the operation.

CASE 1.—J. S. (referred by Dr. Harry Landesman, New York), aged 34, married, machine worker in factory, whose family and personal history were negative, had been perfectly well up to nine weeks before I saw him, when, during his sleep one night, he was awakened by a strangling sensation and a pain in his throat. Within a moment he noticed that the right incisor tooth of the upper jaw, with the plate on which it was attached, was missing. He made efforts with his fingers to extract the plate from his throat but could not feel it. After an hour or two the symptoms of distress subsided and he fell asleep again. When he awoke in the morning his throat was sore, swollen and "reddish looking," and he had indefinite painful sensations in the upper part of his neck in the lateral hyoid regions. For two days he could not swallow anything. About the third day he began to get down some fluid, and each day thereafter he swallowed with less distress until, at the time I saw him (eight weeks after), he was partaking of fluid and semisolid foods. The patient had no pain under ordinary conditions, but when he made effort at swallowing he had a sticking sensation in the lateral hyoid regions high in the front of his neck, but no distress in the sternal region. This distress he described as the presence of something interfering with his swallowing. Dr. Landesman reported that he had passed a bougie several times into the patient's stomach, and had not noticed any obstruction, and the patient stated that he had examined his stools for the first four weeks and had not recovered the plate.

Fig. 1.—Anteroposterior skiagram showing the plate lodged at the level of the third and fourth dorsal vertebrae, and the clavicles in front (Case 1).

Fig. 2.—Slightly lateral position showing the plate lodged at the same level as shown in Figure 1 (Case 1).

Examination was negative, except that the patient had a slight degree of pharyngitis. The tip of a stomach-tube was arrested about the upper part of the sternal region. I did not pass a bougie, feeling that if the plate was lodged there it might cause a rupture of the esophagus. The patient described the tooth-plate as having one tooth fastened to it; it had a lower cutting edge and an upper edge which was flattened and sharp. He said that the plate was made of rubber, and originally had a clamp at both ends to hold it to certain teeth, but that one of these clamps had been broken off for some time. (The lower end of the plate as seen in

Figure 1 shows this perfect end to be pointed downward.) He said that the plate was a narrow one, was pointed at both ends, and had a sharp posterior edge. The two skiagrams (Figs. 1 and 2) show the shadow to be considerably wider than the description of the plate he gave and more irregular in outline than only such a plate would throw. My assumption was that he probably had some ulceration in the esophagus around it accounting for this.

While it would be an easy matter to pass an esophagoscope and seize the plate with an esophagus clamp, it is evident that the plate would have to be seized at the point where the edge was noted through the esophagoscope, there being little or no choice in the selection. The entire assemblage, that is, the esophagoscope and the clamp with the plate fastened at its lower end, would then be delivered by simple direct traction. Since the laryngopharyngeal junction is narrow, and a third skiagram showed that the tooth-plate was in the position which when drawn upward had the two sharp edges of the tooth on one side and the knife edge of the back of the plate on the other, it was plain that the opening of the esophagus was also found necessary in order to have a good exposure to divide the omohyoid. The thyroid gland and the trachea were then retracted to the right. The carotid sheath was next identified and retracted to the left. An esophageal bougie was then passed. At a point as deep in the neck as possible, the esophagus was seized with volsellum forceps and a longitudinal slit made over the bougie. The bougie was then withdrawn and the finger inserted into the esophageal wound. The plate was located apparently opposite the second costosternal junction, its base directed upward with the angle on the left side firmly imbedded in the esophagus. This projecting angle was broken off and removed with a pair of forceps, after which the plate was readily extracted. The wound was then lightly packed with gauze and patient returned to bed. For nine days the patient was nourished by rectum and kept sitting up in bed, and dressings were changed daily. On the tenth day the patient was given liquids by mouth and, there being no escape through the esophageal wound, nourishment continued to be given this way. His convalescence was uneventful in every way."

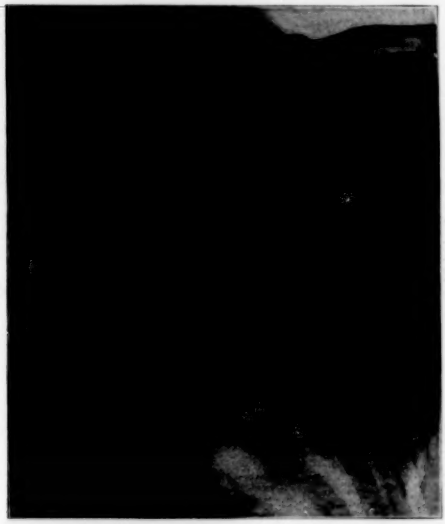

Fig. 3.—Anteroposterior skiagram showing calcification of the arch of the aorta, and other calcareous masses in the lungs (Case 2).

Fig. 4.—Dorsolateral skiagram showing pressure on the esophagus by the arch of the aorta at *A*, pressure on the esophagus by the base of the heart at *B*, and a retention in the esophagus between the two points, and bismuth in the stomach at *C* (Case 2).

would probably be badly cut in delivering the plate, thereby encouraging the danger of a cellulitis of the throat with a possible edema of the glottis. Since the main danger of its removal was a subsequent cellulitis, I decided that this would be minimized to the greatest extent by not endeavoring to remove the plate by the esophagoscope but by an open operation at the side of the neck. This was done one week afterward. Two days before it was performed, the patient began to complain of pains in his right and left thorax, mainly in the right shoulder running down the arm, which pains prevented him from sleeping.

Description of the operation by Dr. J. P. Grant at Dr. J. A. Wyeth's clinic, at the New York Polyclinic Hospital: "The patient was placed on the table with shoulders slightly elevated and face turned to the right. On the left side an incision was made, beginning at the level of the thyroid cartilage and extending downward along the anterior margin of the left sternomastoid for about three inches. The skin, platysma, and superficial and deep fasciae were divided. It

The second case is of interest in showing a type of esophageal obstruction which has not been recognized as yet and which accounted for a peculiar swallowing symptom.

CASE 2.—Mr. C. H. S. (referred by Dr. Stephen Lee, East Orange, N. J.), aged 78, married, manufacturer, family history negative, at the age of 30 noticed a swelling in the root of his neck on the right side. This was diagnosed by Dr. Willard Parker and Dr. Sands as an aneurysm of the subclavian artery for which nothing was done, and the growth has not enlarged in the last forty-eight years. The patient took exceptionally good care of himself in the way of diet, exercise, sleep, etc.

About five years ago he noticed a stinging and distressing sensation in the right chest when he swallowed acid food or drink. This was particularly noticeable when he drank lemon-

ade or ate stewed tomatoes. This stinging sensation, when prominent, gave him flashes of distress down the left arm. He stated that he had no distress excepting when he partook of acid things, and then only for from five to ten minutes after he had swallowed, that partaking of these acid things did not cause him distress in the stomach, and that such distress as he had was entirely substernal.

Examination revealed a tall, thin type of man with an aneurysm of the second portion of the subclavian artery on the right side of the size of a small peach. No radial pulse was palpable on the right side. Blood-pressure, systolic, 186; diastolic, 100. Distinct atheroma of the right brachial. Urine contained increased amounts of indican, no albumin or casts. The heart was enlarged, and the aortic sound accentuated. There was general atony of the hollow viscera of the abdomen, and the second swallowing sound delayed to 30 seconds.

While the diagnoses of senility, aneurysm of the right subclavian artery, chronic excessive intestinal putrefaction of the indolic type, and arteriosclerosis, with gastro-enteric atony were possible, the main point in this connection was the interesting symptoms pertaining to swallowing. The supposition first was that the patient probably had an aneurysm in the arch of the aorta, although no physical signs suggested this. The diagnosis of the cause of the swallowing symptom was made and confirmed by *x*-ray (Figs. 3 and 4).

It is therefore plain that this man had a calcification of the aorta; the pressure on the gullet at that area caused by this calcification, and a pressure exerted on the esophagus by the upper part of the base of the heart, together caused a slight delay in transit in this portion of the tube. When the food or drink was of an acid nature, it irritated the mucous membrane of the esophagus at this midportion, and the patient had the symptoms described, which subsided in a few minutes when the contents in the esophagus had been delivered into the stomach.

THE PREVENTION OF ARTERIOSCLEROSIS AND HEART DISEASE IN OTHERWISE HEALTHY INDIVIDUALS PAST MIDDLE LIFE*

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Every observing person whose experience extends past 40 knows that heart disease is constantly developing among his contemporaries who are otherwise healthy. Surprise is often expressed that this man or that, in spite of what seemed to be right living, has become a victim of heart disease.

The slightest consideration leads to the belief that there is some active or hidden agent working to cause heart disease and hardening of the arteries, and a little examination shows that the causes are not those usually assigned. The healthy old drunkard disproves alcohol as a cause. Rheumatism more often attacks the young, and in later life generally spares the heart and blood-vessels. Men who really overwork are not so numerous as is often thought, and worry, while a great cause of heart disease, is indirect in its effect.

The fact is constantly appearing in the literature of the day that circulatory disease, as shown by statistics, is more frequent than formerly. Tuberculosis has for its victims the most attractive of the youth of the land, but heart disease claims the best and most successful of those past middle life. Much attention is being directed to tuberculosis because its cause and progress have become matters of public knowledge. The victims of heart disease, however, still too often go for months and years without intelligent treatment because no one has pointed out the danger-signals and because the interest in germ disease has absorbed every one's attention.

Heart disease and hardening of the arteries in nine times out of ten are, I believe, due to disturbances of the chemistry of the body. The prevention of heart disease and hardening of the arteries must be accomplished by a proper regulation of the chemistry of the body, particularly that pertaining to the intestines and the liver. This is accomplished through diet, rest and exercise, through the administration of certain well-defined remedies, and the limitation of nervous strain, than which nothing is more potent to upset the bodily chemistry. The technical chemistry involved is difficult and complicated in the extreme, and entirely beyond the comprehension of those not specially trained in the chemistry of this particular branch of work.

The truth is not found in popular explanations with such trite names as "intestinal fermentation," but in the ultimate chemistry of food substances and their changes in the human body.

The tendency to heart disease in otherwise healthy individuals past middle life can better be detected by a chemical examination of the urine than by an examination of the heart itself. By the time the heart itself shows poisoning, as appreciated by the sufferer because of palpitation, pain or shortness of breath, irretrievable damage has been done, and the chemical vice has become so deeply seated that an extreme regimen is necessary, while in the early stages a slight modification of diet and hygiene can check the trouble.

It is often remarked that the consumptive is fortunate who early in his disease has a severe hemorrhage that thoroughly convinces him of the necessity of treatment. In the beginning, heart disease and hardening of the arteries unfortunately have no symptoms, and the changes in the organs themselves are such as can be detected only by the most expert examination. Fortunate is the subject of these changes if the disturbing chemistry of the body leads to pronounced suffering in the direction of recurrent headache, biliousness or dyspepsia before the heart and blood-vessels are damaged, because these things may lead to treatment and prevention.

The prevention of heart disease and arteriosclerosis in otherwise healthy persons past middle life can be accomplished infallibly only when there is a periodic chemical examination of the bodily chemistry at stated intervals by an expert chemist, and when early and proper courses of treatment counteract the tendency before damage is done.

Some of the large life-insurance companies are now examining for this underlying chemical cause of heart disease in otherwise healthy persons who apply for large policies, and yet one of the saddest examples that I ever witnessed of chemical damage to the heart and blood-vessels was the case of the medical officer of one of these very companies.

My conclusions are the result of a practice devoted exclusively to the practical care of heart patients, but I would urge on my colleagues who are privileged to do laboratory research work its vitally important bearing on the life and well-being of mankind at the most useful period of life. The prevention of arteriosclerosis and heart disease in otherwise healthy persons past middle life thus brings up a problem that is seldom considered. However much constant observation may tend to the

* Read before the Fifteenth International Congress on Hygiene and Demography, Washington, D. C., Sept. 27, 1912.

contrary, each man considers himself immune to these diseases, so the victim of heart disease and arteriosclerosis seems to himself a special victim of Providence.

So little is the prevention of arteriosclerosis and heart disease believed to be possible that in a congress such as this it has seldom been discussed; nor, indeed, does the topic seem to have occupied much the minds of medical men. I judge this because an extended experience in addressing medical bodies on this topic has shown that but few physicians have formulated any ideas as to the causation of cardiovascular disease, and hardly any have undertaken its prevention.

Three conditions of the medical mind are encountered. It is comparatively easy to stimulate interest in one who has poorly developed but on the whole correct ideas concerning the subject. It is harder, of course, but not hopeless to deal with the physician who has formed erroneous ideas. It is very hard to deal with the man who has no ideas on a subject at all, but only traditions.

In the literature on cardiovascular diseases a list of indefinite and even absurd causes is given for the most serious affections. Tobacco is given as the usual cause of heart disease, while, in fact, it is the cause in but few cases. Alcohol receives undue blame. Then again, syphilis and infectious diseases are blamed, but they can account for only a few cases. The damage to the heart from rheumatism is definite and well-known. The greater number of heart patients have none of these things, however, and have presented a profound mystery to thoughtful men in all times, while the less thoughtful writer and practitioner have accepted the inadequate causes mentioned above without question. One of the most brilliant writers on the heart of the last half century, David Wooster[1] of California, says:

> Permanent disease of the heart is derived from the deposition in some portion of it of analogous tissues; that is, analogous to healthy tissues. The cartilage and bone deposited in the heart and arteries is analogous to cartilage and bone in the joints, though not exactly like, either chemically or physiologically. It is disease of the heart caused by these deposits, and that caused by the deposition of fat in the substance of the heart and also that caused by atheromatous deposits, either alone or in company with cartilage and bone, with which we are most concerned.
>
> We are accustomed to say that heart disease comes of itself. If one has an inflamed eye, we say that the eye has been recently hurt, or exposed to a cold wind or some contagion; if one has a fever, we say he has been exposed to its cause recently. We recognize these causes, and always refer to them for the solution of the phenomena of acute affections; not so with chronic diseases, we are apt to say they come of themselves; and yet they have causes as definite and appreciable as an intermittent fever or a pneumonia; but they are so long in acting that we keep no record of them, and do not seek them until the disease takes form and place.
>
> We do not know why this premature old age seizes on the heart rather than the lungs or liver; why it does not at the same time cause wrinkles, and parchment coloration of the skin. These negative inquiries are unprofitable, and if answered would not elucidate the unsolved problem; why are analogous growths deposited in the heart at all? They are deposited because one dissipates. But why does dissipation cause them? Because it induces old age. But why does old age cause these deposits? Because nutrition is defective, and hence the form elements are dwarfed and imperfect. But why is nutrition defective in old age? Here the oracle returns no longer any satisfactory answer, and hence the first question remains unanswered and unanswerable; that is, we do not, and probably never can, know why analogous growths are deposited in the heart at all.

1. Wooster, D.: Diseases of the Heart, 1867.

Undue importance has been attached to disease of the coronary arteries, which, in fact, is an element in only a very small proportion of cases; and with a great majority of mankind there is never any question of great muscular strain or external violence.

Much closer to the truth, but not within its light, are the large number of authors who lay great stress on gout as a cause of hardening blood-vessel disease in those past middle life. These at least recognize a chemical cause.

My own belief is that most cases of cardiovascular disease developing past middle life are instances of chronic amino-acid poisoning by acids to which the tissues of the individual are sensitive, and that the condition known as intestinal putrefaction has an important bearing on the matter, though it does not seem to me that it is so straightforward an instance of bacterial disease as many at the present time maintain.

If we look about us in the world we see many examples of persons who are poisoned by particular articles of food; that is, poisoned in a way that makes them immediately and uncomfortably ill. Many other persons eating the same food escape harm, and we say that those who have been made ill are idiosyncratic to that particular kind of food.

Heart disease seems to me often to develop as a result of damage done by some material derived from food to which the person is idiosyncratic. The damage also often comes about gradually without disagreeable symptoms. The substances at fault are in all probability the amino-acids derived from the breaking down in the intestinal tract of nitrogenous food derived from eggs, fish, meat and soups. Which of these foods supply the amino-acids doing the damage can be determined only by experiment with the individual under observation. We cannot lay down rules for every one. Thus, I have observed examples in which almost fatal heart disease developed from the excessive eating of fish; many others are damaged by an excess of eggs; and still a greater number by meat. When the process is started, even a very small quantity of the offending food can keep the damage going on.

Of late years it has become fashionable to consider this whole matter one of intestinal putrefaction. This seems to be going too far; but it is a fact that the chemical manifestation of the condition, known as intestinal putrefaction, as shown by indican in the urine, is a usual accompaniment of amino-acid poisoning. I have seen very bad cases in which it was absent.

The early signs of heart disease are the early signs of amino-acid poisoning, or amino-acid toxicardia namely, disturbances of heart action, in the form of rapidity or premature contractions, and a sense of oppression, pain over the heart, shortness of breath on exertion and poor circulation.

A similar poison may attack the nerves and cause neurasthenia or recurrent headaches. The combination of headaches and palpitation is quite common.

These symptoms have often been described as dyspepsia, without any definite idea as to what was meant by the term. Dyspepsia in itself hardly ever affects the heart. It is the product of a wrong chemistry of the protein food that does this.

NATURAL DEVELOPMENT OF HEART DISEASE

The study of many thousands of specimens and of a great number of patients leads me to the belief that the natural course of the development of heart disease is as follows: At first the patient has no symptoms. Heart

disease in its early stages has no symptoms, no acidity of the stomach, no constipation—nothing. The first thing that is noticed, if there is an accidental examination of the urine, is the presence of indican or the derivatives of skatol or phenol, one or all of the putrefaction group. The patient has no symptoms until one of several things happens. After a long time the patient may have an attack of hemiplegia, or quite early he may have an attack of neurasthenia (for intestinal putrefaction affects the nerves); then the condition is recognized. In the latter case, the patient undergoes treatment, is sent away, and frequently escapes arteriosclerosis. If he happens to escape nervous symptoms, he goes on for a good many years, perhaps excreting indican (which is the index of various toxins). After a while the excretion of these products through the kidneys damages them. Then albuminuria develops and a few hyaline casts appear. These are often discovered by life-insurance examiners, which is very fortunate. If this is not the case, the myocardium often becomes involved. The arteries are affected last. So some trouble with the myocardium attacks the patient; he has a soft murmur, and slight dilatation of the heart, or else precordial pain, which is explained by the reflex protective phenomenon, which consists of the fact that whenever unstriped muscular tissue is unable to do its work easily, it irritates that level of the spinal cord, and the sensory nerves passing through it are irritated, so that the nerve gives rise to pain that is felt in the brain and referred to the distribution of the nerve. The little boy who eats the green apple has the same kind of pain, and it is exactly analogous to the failure of the heart muscle which is poisoned by amino-acids, and has difficulty in doing its work.

Now, if the patient escapes cardiac symptoms and neurasthenia, and albuminuria is not discovered, then last of all the blood-vessels are affected. The blood-vessels are not affected so much directly as indirectly through the kidneys, which are damaged and unable to do their work except with additional blood-pressure; so when the kidneys are unable to do their work properly, blood-pressure is raised. It is a compensatory phenomenon. When the blood-pressure is raised, the heart becomes hypertrophied to keep up the blood-pressure more easily, and the blood-vessels themselves become hypertrophied for the same reason. We have at first the hypertrophy of the blood-vessels and later the deposit of fibrous tissue.

I should say that in the early stages of this condition, when the toxic elements are active though excreted, and the structural changes have not taken place in the kidneys enough to increase blood-pressure, these patients have low blood-pressure because of the disturbance of the tone of the heart muscle, and the muscular elements of the blood-vessels. The moment the kidneys become at all incompetent, there is a tendency to high blood-pressure.

Thus we have a vicious circle—the hypertrophied heart and blood-vessels and the damaged kidneys. The kidneys and blood-vessels are progressively damaged, and at the end of twenty-five or thirty years the patient, who started with indicanuria, has a typical case of Bright's disease, with hypertrophied heart and blood-vessels, and liability to terminal apoplexy, uremia or cardiac dilatation. This is the natural history of a case of heart disease.

So much for a general consideration of the subject which is necessary to the logical conclusion with reference to prevention

PREVENTION OF ARTERIOSCLEROSIS

The importance of intestinal putrefaction has been dwelt on by many writers, and is no doubt a long step in the right direction. A low protein diet seemed at the time when it was advocated a great advance in accomplishing good, as is often the case, even if administered under a misconception. I now believe in and advocate *the few protein diet*, which seems to justify itself by the results I have observed. It is founded on the belief that heart disease is not caused by a high protein diet as such, but by the action of some amino-acid or acids derived from some particular protein food or foods to which the individual attacked is idiosyncratic. I believe, as mentioned above, that conscious poisoning of many individuals by particular protein derivatives points in this direction.

So a person eating the great variety of protein foods found in a modern dietary is laying himself open to the attack of many different kinds of amino-acids, any one of which may be the one which is to do him harm. If he cuts out one-half of his proteins, he is by that much safer. If he is willing to do with a single protein, he is almost certain, on the theory of chances, to escape that which will do him damage.

In Dr. Chittenden's laboratory it has been shown that animals do fairly well through several generations on single proteins. I have also abundantly proved that human beings sick with heart disease not only can stand a single protein diet, but usually become improved on it.

This theory explains to me several things that have always been obscure, in the first place, the relative unfruitfulness of the quantitative investigation of the nitrogen intake and outgo in disease. The matter being one of quality and not of quantity, the reason becomes plain enough.

The fact that the poisoning is not the same in all cases, seldom, indeed, in any two, explains the great variety of different combinations of symptoms. In one patient migraine is prominent, in another pain derived from the heart muscle, in another the kidneys are early affected, and in others the nervous system is profoundly involved.

The prevention of heart disease in otherwise healthy persons past middle life is a matter of dietetic management and the avoidance of all those things which may upset the chemistry of the body. The chemistry of the body can be upset by nerve strain, anxiety and stress; it can be upset by the abuse of drugs, particularly the saline laxatives and mineral waters; it can be profoundly upset by accidental food poisoning or a severe attack of malaria, dysentery or an infectious fever. Nor should we forget the necessity of rest and exercise.

In the presence of any suspicion of commencing trouble, a course of treatment should be taken consisting of castor oil and a temporary diet from which eggs, fish, meat and soups, are excluded, cheese being allowed to supply nitrogen in the safest form. When the danger seems to be past, the protein food should be added one article at a time, as, for instance, meat once a day, and later eggs or fish; but the number of kinds of protein food must be kept within the limits according to the condition of the individual. At first the person may be idiosyncratic to only one or two forms of food. A person with advanced heart disease is idiosyncratic to most forms of protein food. A very thoughtful physician, Dr. Edward Cornwall[2] of Brooklyn, said in a recent article:

2. Cornwall, E.: Dietetic Treatment of Cardiovascular Disease, New York Med. Jour., June 22, 1912.

In this connection I should like to call attention to the value of dietetic treatment in the prophylaxis of cardiovascular disease. Many individuals are destined from their birth to die of this disease. Even if they take ordinarily good care of themselves, when middle life comes, their heart, arteries or kidneys begin to wear out. This may be due to the poor material of which their vascular system is made, or to abnormally functioning organs, especially an insufficient liver. Whatever may be the particular weakness in their make-up, that weakness should be favored. This can best be done, when we suspect an individual of being in this predestined class—and the suspicion is always excited by a family history of apoplexy, Bright's disease, diabetes, obesity or chronic rheumatism—by giving him an antiputrefactive diet, which is approximately, though not necessarily completely, lactovegetarian, and which is limited in quantity to his physiologic requirements; and by starting him on that diet as early as possible. And those who engage in the strenuous life, especially in the cities, living this strenuous life differently from their ancestors and unhygienically, can with advantage make the work which their food puts on their already strained cardiovascular system as light as possible by such dietetic prophylaxis.

Much of this is true.

CONCLUSIONS

The causes and prevention of heart disease have been considered in the past, as shown by my quotation, as matters of great obscurity, and often placed on the shoulders of Providence.

I would like to emphasize the analogy between the universally recognized idiosyncrasy of some individuals to particular articles of protein food that produce in them symptoms of pain, and the unconscious idiosyncrasy of many others to amino-acids which produce damage without conscious symptoms.

I would like to urge the importance of periodic chemical examinations of supposedly healthy individuals past middle life to detect and correct conditions that would lead to heart disease.

I would like to express my belief again that the abuse of saline laxatives and their disturbing influence on the chemistry of the body and on osmosis tend to the production of heart disease, leaving castor oil now, as ever, the safest and best remedy for those threatened with amino-acid poisoning.

Lastly, those attacked with a tendency to heart disease must receive courses of treatment at intervals, such as are so finely developed in some of the cure resorts of Europe which we are now seeking to copy in America. When necessary, such treatment can be carried out in the home by the creation of a proper environment.

54 West Fifty-Fifth Street.

The Finest Milk in the World.—The characteristics of the finest milk in the world are as follows: 1. Cattle under veterinary inspection. 2. Employees under medical inspection. 3. Dairies and stations under sanitary inspection. 4. Milk free from dirt, and bacteria below 25,000 in a raw state. 5. Clarified to throw out all sediment and inflammatory products. 6. Pasteurized in the bottle at 145 F. for thirty minutes. 7. Refrigerated so as to prevent multiplication of bacteria before delivery to consumer. If all milk for drinking-purposes were like this, the milk problem, so far as public health is concerned, would be completely solved. The only obstacle in the way of such perfection is the commercial obstacle. Each characteristic adds its own fraction to the increased price, and taken together they amount to between 2 and 3 cents per quart. With market milk retailing in our large cities at 9 cents per quart, the cost of such milk as above described, would be not more than 12 cents per quart.—*North's Milk Bulletin*, October, 1912.

MEDICAL PRACTICE IN THE CANAL ZONE*

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It is the general belief that the practice of medicine in tropical countries consists largely in the diagnosis and treatment of diseases peculiar to the tropics; that is to say, diseases which are entirely different from those encountered in the temperate zone.

That such is not the case was amply demonstrated to me during a recent visit to the Canal Zone. Therefore, because of the importance to us of the opening of the Panama Canal, I deem it worth while to call attention to some of the diseases seen there which are also common here, as well as to those peculiar to that area and found here infrequently or not at all.

Moreover, every practitioner must familiarize himself with diseases peculiar to the tropics, because, first, on the return of workmen when the canal is completed, some are certain to have contracted diseases peculiar to that climate and second, the increased travel from tropical countries in recent years makes more necessary this general knowledge in regard to tropical diseases.

Canal Zone employees who by reason of injury, however slight, or illness are unable to work are sent to the hospital and remain there or in the convalescent home until they can return to work. Patients remain in the hospital longer than otherwise might be the case, since there is no outpatient department to care for those who are not confined to bed. Those up and about the wards requiring but little, if any, care are sent to the convalescent home on the Island of Toboga, a beautiful island in the Pacific Ocean about 18 miles from Ancon. This is an ideal spot for convalescents, and the surroundings are more suggestive of a summer hotel than of a hospital, since no bed patients are admitted. This island is practically free from mosquitoes, and malaria is rarely if ever seen.

The hospitals at Colon and Ancon are well located; that at Colon is built on the water's edge and so situated as to receive the maximum amount of breeze from the sea. This hospital has about four hundred beds and in general plan and administration is similar to the larger hospital at Ancon on the Pacific side of the Isthmus, which has about sixteen hundred beds. It is built around the sides of Ancon Hill, a hill 650 feet high with sides so steep that in many places the hill had to be cut away to make room for the buildings. Here are situated at various levels the thirty-seven or more wards of the hospital, including the insane department, where are confined about three hundred insane patients.

The buildings are one- and two-story frame structures with tiled roofing, many of them built by the French. Their foundations are of stone or cement pillars, one to several feet from the ground, these being necessary on account of the moisture, which would always keep them damp, and in order to make them rat-proof. Throughout, their construction is such as to admit of the maximum amount of air. In some, shutters are used for windows and doors instead of glass and the ordinary panel door. The partitions between rooms and wards extend only part way to the ceiling, above which is latticework; or the space is left open, either arrangement admitting of free passage of air from one room to another. Private wards with private rooms of from one to four beds are provided and are arranged on the same general plan. On all sides of the buildings are wide porches, which are screened

* Read at a meeting of the Waltham Medical Club, Jan. 2, 1913.

in, the entrance being through a vestibule generally with two screen doors placed so that the outer one is closed before the inner one is opened. The wards are large, a single open ward having as many as forty or fifty beds.

The buildings are practically free from flies and mosquitoes. The grass is kept fairly short on the lawns about the hospital buildings and mosquitoes are not numerous. The water is collected in cement drains not affording stagnant pools in which they might breed. Larvacide is spread where water is likely to collect or where there is moisture from seepage. This effectively prevents their breeding. The drainage from Ancon Hill is rapid and efficient because of its steep sides, which are 45 degrees or more in many places.

Each section of the hospital is in charge of a physician and two or three assistants, and the work is divided and the duties of each are defined. The work exacted of the physicians is enormous, when one considers that there have been as many as seventy patients admitted to a single section in a day. This is an unusually large number, to be sure, the average being perhaps from eight to ten.

A daily passenger train each way has a hospital car attached, provided with stretchers for those too ill to sit up. It seldom happens that this car is unoccupied. The patients are sent in by the various dispensary physicians along the line of the canal.

Accidents among the employees are common. Even with the greatest care, in such a stupendous work with so much machinery and so many workmen, this must be so. The number is materially increased because of the ignorance of the workmen, especially the negroes, who do not or will not appreciate danger and who take the most desperate chances if it appears to be easier.

Spanish is the language most commonly used, except by the Americans and Jamaicans, and it is quite essential that the physician be able to converse in this language. Many of the Americans in the employ of the commission speak Spanish fluently. The various nationalities are segregated, so that there is the American section, medical and surgical; the Spanish section, medical and surgical, and medical and surgical wards for negroes.

Many countries are represented among the employees of the commission: America, Jamaica, Spain, Greece, Italy, St. Lucia, Trinidad, St. Thomas, Columbia, India, Barbados, Grenada, St. Kitts, Hayti, Chili, Peru, Ecuador, Martinique, Montserrat, Santo Domingo, Fortune Island and Antigua. With such a mixture of people the difficulties of caring for them are obvious.

Generally speaking, the clinical histories of hospital patients are inaccurate and unreliable. In the Canal Zone they are less reliable than here. There are several reasons for this; first, and probably of most importance, the patients are ignorant and do not understand the questions put to them and are unable to describe accurately their symptoms; or, if they speak only Spanish or some other foreign tongue, it may not be understood or interpreted properly by the one who takes the history; second, if an employee on the gold pay-roll becomes ill, he not only receives medical care in the hospital but also his regular wages as long as he is unable to work, provided this does not exceed thirty days in any twelve months. Employees on the silver pay-roll, that is to say, Europeans and negroes, receive hospital care only and do not receive wages while ill. Employees of all classes injured in the line of duty receive hospital care and full pay provided the time in which they cannot work does not exceed twelve months. Under these conditions malingering is less common among the employees than might be expected. It is quite rare among the Americans on the medical service, although it prevails more or less among all classes on the surgical service.

While the diagnosis of diseases in the tropics may not be more difficult, it must be gone into thoroughly, and much routine work must be done. Here one is especially impressed with the clinical laboratory as an aid to diagnosis. In almost every case admitted, the whole routine laboratory procedure must be gone through, a white count, a differential count of the leukocytes, a study of the red cells, a search for the parasites of the blood and in certain cases the seroreactions and blood-culture methods must be made use of. The urine and stools are next in importance in this routine examination, and the sputum in those cases in which there are symptoms or signs of disease in the lungs.

Diagnosis is further complicated by the fact that single infections, to which may be attributed with certainty all the symptoms, are rare. For example, a patient may enter the hospital with evident lobar pneumonia. In the routine examination it may be found that he also has malaria, amebic dysentery and several other kinds of intestinal parasites. Such examples of multiple infections are not uncommon. One can easily understand how one condition or the other may be modified accordingly, as well as how prognosis and treatment may be affected.

Of the diseases occurring there, many are identical with those found here.

EXANTHEMS, SKIN DISEASES, ETC.

Measles and chicken-pox thrive well and do not differ in any essential features from the same diseases seen here. Scarlet fever is much less common and epidemics are short-lived. It has been stated that scarlet fever is not a tropical disease, and certainly the statement is well borne out on the Isthmus.

Of the laborers imported, many have not had the exanthems and on exposure promptly come down with them. It is an interesting fact that those coming from Fortune Island, which lies to the north and east of Cuba, were especially prone to these infections. They do not have these diseases in their own land, because the amount of traffic with other countries is so little that the means of introduction are minimized. They have proved themselves so liable to these contagions, however, that the commission has found it unprofitable to import them as laborers, since they immediately become ill and are then a hospital charge.

Whooping-cough and diphtheria are met as frequently as with us, though I should judge they are less severe than in this climate.

Yellow fever, the disease which almost decimated the inhabitants during the time of the French occupation, without which it can safely be said they would have completed the canal, is entirely stamped out. The reports of sickness and death by those who were on the Isthmus at that time are scarcely realized now under the present efficient sanitary conditions. This wonderful achievement in sanitary science, the principles of which were less than a dozen years old, first successfully demonstrated in Cuba and on the Isthmus against this disease, makes it seem probable that yellow fever is to be the first of the acute infectious diseases from which mankind is to be freed. No case of yellow fever has originated in the Canal Zone since 1905. One case coming into Panama from a South American port last summer was as much of a curiosity to most of the physicians

there as it would have been to us. There have been no cases of bubonic plague for six years, though it is a disease always kept in mind, and careful search for it is made in rats that die or are killed.

Diseases of the skin are quite common. Many are the same as those observed here, while others are peculiar to the tropical climate. A common and most troublesome one is dhobie itch, considered to be a filth disease, characterized by a scaling eruption sharply defined and with brownish pigmentation. It appears on the trunk, in the axillae and in the groins, and may spread over the entire body and extremities. It is believed to be of parasitic origin caused by the *Microsporon minutissimum*, and spreads by contact as does ringworm. The chief symptom is intense itching, which is relieved and the condition materially benefited by dhobie ointment, having the following composition:

		gm. or c.c.	
℞	Acidi salicylici		
	Hydrargyri ammoniati....āā	2	gr. xx
	Bismuthi subnitratis		
	Olei eucalypti.....āā	6	ʒi
	Lanolini .....ad	50	ʒi

This ointment is recommended for other conditions in which itching is a prominent symptom.

The eruption of secondary syphilis is frequently seen in all its varied forms. Sometimes it appears as the coarse papular scaling variety, which is quite characteristic even in the negroes. The macular syphilid is less easily recognized in these patients.

Judging from the number of cases seen during a short stay there, it would seem that psoriasis is frequent. Yaws is seen occasionally and resembles the eruption of impetigo. The crusts are elevated, the skin moist beneath and numerous spirochetes are present in the secretions. It is treated with salvarsan.

Tuberculosis is common, especially among the blacks, and presents the same difficulties in early diagnosis that we experience. Quite surprising was the frequency of pneumonia. We usually associate pneumonia, I think, with colder or more variable climates or with the winter months, though Osler states that it occurs equally in hot and cold countries, the incidence being greater in the winter and spring months. With a mean temperature ranging from 79.5 to 80.2 F. during the month of August, its prevalence would scarcely be suspected, yet cases were entering the hospital almost daily. It is said to be more common during the wet season.

Equally surprising was the frequency of influenza, manifesting itself not so much as we see it here (coryza, headache, fever, aching pains throughout the body, etc.) but as a bronchopneumonia or bronchitis, which runs its course in from three to six weeks. Abundant greenish nummular sputum is raised, and it is believed that this often forms a nucleus for the later development of basal tuberculosis.

Infantile paralysis occurs occasionally, but it has not assumed the proportions of an epidemic at any time until last summer when several cases occurred.

Beriberi is seldom seen. Dr. Deeks, chief of the medical clinic, thinks that it occurs less often because polished rice does not constitute a very important article of the diet. Formerly it was encountered among Panamanians engaged in the pearl-fishing industry.

Pellagra is seen only occasionally, possibly because of the generous amount of protein included in the diet for both the sick and the well. If it progresses to dementia, recovery seldom occurs.

Postfebrile insanity seems to be much more frequent there than here. It is not limited to those sick with any particular disease, but may occur in any case in which there has been a prolonged elevation in temperature. These patients are transferred to the insane department of the hospital, where the majority recover.

Of children's diseases, intestinal disturbances are common. Diseases of nutrition are more rare than one would suppose. Milk is scarcely to be had even at 40 cents (gold, 80 cents silver) per quart. This makes artificial feeding impossible, as practiced here with modified cow's milk. Condensed milk is the most available substitute, though its shortcomings are well recognized when compared with breast-milk or modified cow's milk.

Acute articular rheumatism is not a common disease. Other forms of arthritis—gonorrheal, dysenteric, tuberculous and pneumonic—are frequently seen. In the gonorrheal form good results are being obtained by the use of gonococcus vaccine. Patients recover from that following dysentery with treatment of the latter.

Malaria is a common etiologic factor in nephritis, which occurs in both the acute and chronic forms. Quartan malaria among negroes may be so mild that nephritis does not develop; but in the other forms nephritis is common, occurs in direct proportion to the severity of the infection and is fatal quite as often as the malaria. This is especially true of the estivo-autumnal type. The Americans and Spaniards seem less likely to have a complicating nephritis following this disease.

Diseases of the stomach are met quite as commonly and are of about the same nature as those we have to deal with here; while diseases of the intestines are perhaps more common than any other, if we include the parasitic infections.

Typhoid fever is not common, contrary to what one might expect. I was impressed with the mild type of the disease as it occurs there, and saw but one patient in the hospital who presented the picture of a severe typhoid. As a rule the temperature is only moderately elevated with but little delirium and tympanites. Rarely hemorrhage or perforation occurs. This may be accounted for by the fact that paratyphoid infections are seen more often than typhoid, at least four varieties being recognized. Only two small epidemics have occurred, each having been traced to its origin and successful means used to check it. The *Bacillus enteritidis* is also known to produce symptoms simulating typhoid, and has to be considered in the diagnosis.

TREATMENT OF DYSENTERY

Most frequent of the intestinal disturbances, as well as the most serious, is dysentery. No less than fourteen varieties are recognized, of which the ameba, bilharzia, *Balantidium coli*, milk, meat, malaria, nephritis, various bacilli, cirrhosis of the liver and cardiac disease represent some of the more common causes.

By dysentery is meant frequent loose movements of the bowels containing blood and pus. The treatment is simple, depending on the cause, if it can be determined. The patient is put to bed at once and given a mild diet. Accurate data regarding the number and character of the stools are kept. Half an ounce of castor oil is given. This is followed in case of amebiasis by bismuth subnitrate, a heaping teaspoonful every four hours, until the stools are formed, then a teaspoonful three times a day. The bismuth is mixed into a paste with water, and then diluted to a full glass with some effervescent water before administration. Unless precautions are taken to give it well suspended, it will form

a paste in the intestinal tract and may become toxic. This treatment is continued until the bowels are absolutely constipated for forty-eight hours and blood and pus can no longer be found microscopically in the stools. An ounce of castor oil is now given, and the patient is slowly returned to full diet and allowed to get up. Bismuth subnitrate, one teaspoonful three times a day, is continued during convalescence, and a tonic, such as the syrup of the iodid of iron (one dram, three times a day), is given. This treatment has supplanted the former treatment with ipecac. In obstinate cases not yielding to this treatment, the patients are operated on and the colon is irrigated with water or normal saline. Dysentery from other causes is treated symptomatically.

In amebic dysentery, liver abscess is the most common complication and is treated surgically. The differential count of the leukocytes is an important aid in diagnosis.

PARASITIC AND VENEREAL DISEASES, MALARIA, ETC.

Intestinal parasites, especially nematodes, are, of course, common, and of these the hookworm is the one most frequently found, as well as the most harmful. Practically all the negroes are infected with it. There is great variation in the severity of the infection, and many of the classic symptoms are wanting. Ground-itch is seldom seen. The most reasonable explanation for this would seem to be that the patients are not seen at the time infection occurs, as many so affected go without shoes and are therefore exposed at all times. Still another interesting observation is the absence of eosinophilia in these parasitic infections; this is particularly true of hookworm, in which eosinophilia is expected to be present. After prolonged search among those infected with hookworm, I was able to find a patient with 10 per cent. eosinophils. One possible explanation of this is that many of the patients have malaria, accompanied by a lymphocytosis, which has the effect of relatively diminishing the eosinophils, or possibly as is the case with trichinosis, the eosinophils are increased only during the infecting period. There is this difference however. In trichinosis the parasites are encysted within a month or six weeks after infection, and save for the reaction produced immediately around the cyst, no further harm is done and no symptoms are present, so far as is known. The eosinophils gradually diminish to normal or nearly so. In hookworm or other parasitic infections which are accompanied by an eosinophilia, the activity of the parasites is kept up as long as any are present; consequently one would expect that whatever causes the eosinophilia at the outset of the infection would tend toward its persistence.

Infection with intestinal parasites is rarely single because the conditions favorable for infection with one parasite suffice for others; and certainly conditions in the tropics are ideal for the development of parasites which undergo certain stages outside of the body of the host and do not require an intermediate host.

Other parasites found are *Strongyloides intestinalis*, *Ascaris lumbricoides*, *Trichocephalus trichiuris*, ciliated monads, less commonly *Oxyuris vermicularis* and bilharzia. Of the last-named, only ova with lateral spines are found, and these never in the urine. Flatworms do not occur more frequently than here.

Venereal diseases flourish, as one might expect, among people living as these natives do. Syphilis appears with all its varied manifestations. A definite history of it is almost never obtained, and the Wassermann reaction has done much to clear up the diagnosis of cases with obscure symptoms. Of a large number of patients examined in a single day, positive Wassermann reactions have been obtained in as high as 50 per cent. Late syphilis, malaria and liver abscess present a problem in diagnosis not always easy of solution.

Filaria is not uncommonly seen, but is seldom accompanied by chyluria. Elephantiasis with glandular involvement is suggestive in the older infections, being the result of the acute lymphadenitis, from which recovery is never complete.

An acute febrile disease peculiar to the Canal Zone, so far as is known at present, called "six-day fever" has been described in a preliminary report by Dr. Deeks,[1] chief of the medical clinic. It is of acute onset with chills, headache, backache and fever, the temperature reaching as high as 104° and falling on the sixth day by crisis to normal or below. The spleen is enlarged. Leukopenia with a high percentage of polynuclears is the most important blood change. Albuminuria is almost always present, sometimes accompanied by casts. A rash especially on the extremities is frequently seen in the severe cases at some period of the disease, often at the time of the crisis.

The commonest disease is malaria. It almost equaled yellow fever as a cause of death during the French occupation. The estivo-autumnal type predominates in the proportion of about 80 per cent., next in order of frequency is tertian and least often the quartan. Infections are of all degrees of severity, some patients showing an extreme anemia with jaundice on entrance to the hospital. In the cerebral form, which is scarcely mentioned by writers of text-books, the patient may be comatose on entrance, owing to a toxemia or to the capillaries of the brain being blocked by the malarial parasites. The spleen and bone-marrow in such cases may show but few organisms. Occasionally patients are actively delirious from the toxic condition. As a measure of severity, Dr. W. M. James has found that as high as 15 or 20 per cent. of the red cells contained plasmodia. Cases of such severe infection are promptly fatal unless treatment is begun near the onset of the paroxysm. Treatment consists in large doses of quinin, 22½ grains in 500 c.c. of normal salt solution intravenously, or the same dose in 1:20 dilution subcutaneously. If the parasites have matured before treatment is begun, the only hope is that the patient will survive the paroxysm, when the young forms of the next generation can be killed. This dose given intravenously and repeated in five hours will kill nearly every young parasite in the generation. If a double infection occurs, as not infrequently happens, in which both young and adult parasites are present, or if there is great toxemia or severe nephritis, the prognosis is bad. According to Dr. James an infection of 50 per cent. of the red cells, as reported by some authors, does not occur. The diagnosis of malaria need never be in doubt in untreated cases, and no untreated patient has died of malaria in the hospital without the diagnosis having been made by finding the plasmodia. Mild infections of malaria, or cases that have received treatment, in which no organisms are demonstrable, which run a course similar to malaria in every respect, are termed clinical malaria. Every case of malaria presents splenic enlargement, which usually diminishes under quinin treatment. The *x*-ray has produced good results in the relief of pain due to such enlargement. The tertian and quartan types are usually accompanied by anemia. Not so in the estivo-autumnal. The former

1. Deeks, W. E.: A Preliminary Report of a Hitherto Unrecognized Six-Day Fever in Ancon, Canal Zone, THE JOURNAL A. M. A., Oct. 26, 1912, p. 1511.

are relapsing, especially the quartan. Dr. James after a careful study of this subject believes that from 60 to 70 per cent. of the total malaria in negroes and Spaniards at present is due to relapse. Americans who continue the treatment more faithfully seldom have a relapse. The treatment of these cases has been incomplete, possibly because of an immunity to the quinin acquired by the parasites; moreover, the parasites may disappear from the peripheral circulation, or symptoms may disappear completely when the patient is put to bed.

Two severe complications are met especially in the estivo-autumnal type. One is hemoglobinuric or Blackwater fever. The data relative to the etiology and treatment of the condition in the Canal Zone were made the subject of a complete report to the commission in 1911 by Drs. Deeks and James. It should be remembered that doses of quinin in any amount from ½ to 20 grains may produce Blackwater fever, and that it may occur as a result of malaria. It is an interesting fact that it seldom occurs in the negroes. The other complication is nephritis, which has been considered above.

The treatment for malaria in cases of moderate infection is quinin sulphate in solution (20 grains on admission, then 10 grains three times a day). Full diet is ordered. In severe cases the patients are kept in bed and given 10 grains of quinin every four hours, until improvement warrants its reduction to 10 grains three times a day. Quinin is always given in a dilute solution of sulphuric acid, 5 grains to a fluidram. Patients who cannot retain quinin given by the mouth, as well as those with very severe infections or toxic cases, are put on a liquid diet and quinin is given subcutaneously as above described. Intravenous injection of quinin is sometimes used in chronic cases with good results. The later treatment is 15 grains every six hours subcutaneously until the patient can take it by mouth. Blindness or deafness occasionally occurs after such heroic treatment, but recovery follows as soon as the medicaments are withheld.

THE LEPER COLONY

Until the commission assumed charge of the conditions affecting the health of residents of the Canal Zone and the quarantine regulations, including the cities of Colon and Panama, there was no provision for the isolation and care of cases of leprosy. These patients were to be found mingling with the people under conditions most favorable for the spread of the disease. The commission was quick to appreciate this, and promptly established a colony for such unfortunates. They are not allowed to pass quarantine, though it is possible for them to enter from inland places. The leper hospital is established at Palo Seco on the mainland across the bay from Ancon. Several buildings are provided for housing them, besides a building used as a school for the children, who are taught by one of their own number. This building also serves for religious services.

The colony consists of fifty patients, mostly negroes and Spaniards. Several members of one family are confined there. In general they are quite well contented. They are allowed a certain amount of freedom and are furnished with food, clothing and tobacco. In addition they are allowed to raise chickens and garden-stuff to be used by themselves, for which the commission pays them from $20 to $30 each month. In spite of this encouragement some are indolent and will not work or try to better their condition. These are most likely to complain of the food served them and the treatment they receive.

As a stimulus to investigation there is a well-organized medical association, which holds its meetings every month. Medical men from all over the Zone are invited to attend, and a special train is run leaving Panama at 11 p. m. It is unfortunate there as elsewhere that these men who have the desire and ability to engage in research cannot be relieved of the routine work and allowed to use their time and exercise their talent in original investigation and thus profit from the wealth of material that otherwise goes for naught.

SCHOOL FOR TROPICAL MEDICINE

Many of our medical schools are alive to the importance of a school of tropical medicine in this country. I have already referred to the importance of a knowledge of tropical diseases by every clinician. Most teachers believe thoroughly in practical courses of study, and this can best be brought about by bedside teaching. Knowledge of tropical medicine cannot be obtained from textbooks alone any more than can a knowledge of the commoner diseases. The importance of seeing the patient, taking the history, making frequent physical examinations, the work in the clinical laboratory, the treatment and subsequent course of the disease, as well as post-mortem findings is as essential to a full understanding of diseases peculiar to the tropics as of diseases studied here.

Some have suggested the establishment of schools of tropical medicine in the larger seaport towns depending on the patients who are ill on arriving in quarantine to supply the clinical material. There are several objections to this; first, the number of patients is necessarily small; second, patients ill of a disease contracted in the tropics do not take long sea voyages, especially if there is a likelihood of the disease from which they are suffering keeping them in quarantine. Most of those who have contracted diseases in the tropics and are allowed to pass quarantine are seen in the various hospitals of our larger cities. They would afford meager clinical material for students in tropical medicine. No place is so well suited for the study of tropical diseases as is a tropical port where may be studied the disease, its mode of infection, the various types of the disease, and the habits of life and the surroundings of patients, the most severely afflicted of whom could scarcely undertake a trip northward for medical treatment. It is necessary that the treatment be carried to the patients. In the western hemisphere no place is so available for such a school as the Canal Zone. Though it be depopulated, as is anticipated, except for the two cities of Colon and Panama, there will always be need of one or more hospitals, if contemplated travel reaches expectations. A single school or several schools should combine to establish such a hospital in the tropics where medical students in their final year may elect to do their work and where postgraduate work may be done. The study of the practical application of sanitation in the tropics, as well as of diseases peculiar to that area, would well repay the student or clinician beyond the fullest measure.

My thanks are due to the commission for the privileges accorded me at the hospital, to Dr. W. E. Deeks, chief of the medical clinic, to Dr. W. M. James, his first assistant, as well as to his other assistants for their very generous hospitality.

535 Beacon Street.

The Perennial Possibility of Pregnancy.—Never assume that a patient cannot be pregnant unless you have yourself taken away her uterus and ovaries, and even then you had better examine to make sure.—Arthur E. Giles in *Clin. Jour.*, London.

AN ANALYSIS OF FOUR HUNDRED AND TWENTY-SIX CEREBROSPINAL FLUIDS FROM VARIOUS PATHOLOGIC CONDITIONS*

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The use of the fluid contained in the cerebrospinal canal for the purposes of aid in diagnosis presents additional evidence of the tendency of modern medicine. Advantage is taken of all possible available means for clearing up the many obscure conditions which still constitute the bulk of the science and which have baffled the diagnostic skill of the physician from the earliest time to the present day. If any branch of medicine is in need of aid in diagnosis, that devoted to the study of diseases referable to the cerebrospinal tract is certainly the one.

It is to be borne in mind, and special emphasis is laid on the fact, that the signs and symptoms manifested by the cerebrospinal tract in the course of disease do not necessarily mean disease of this part of the body any more than the bleeding from the nose in typhoid represents local disease, bronchitis a disease of the respiratory tract, or a severe eruption a disease of the skin.

This study has been conducted in an attempt to give these symptoms their proper interpretation. No claim is laid to profound research or exhaustiveness; only along those lines which were thought practical in a laboratory of a general hospital, and with the definite purpose of aiding the visiting staff, were these examinations made.

The investigation covers a period of six years, from 1907 to 1912, inclusive, and embodies the result, in epitomized form, of examinations of 426 fluids from 317 cases.

It was deemed most practical to examine the fluids for the following characteristics:

Quantity, whether increased or diminished.
Appearance, whether clear, turbid or bloody.
The albumin and globulin content.
The capacity for reducing Fehling's solution.
The cytology, bacteriology, animal inoculation and agglutination properties; and for the past two years, complement-fixation tests were made.

The conclusions which are noted at the end of this contribution should prove of special practical value to the general practitioner, and if they differ in some respects from those generally accepted, they have nevertheless proved to be reliable and practical guides.

For the purpose of the general practitioner, the most practical classification of the cerebrospinal fluids is their division into clear fluids and turbid fluids. This one physical characteristic in itself gives immediate, important and definite information of the existing condition regardless of its chemistry and bacteriology.

Under the head of the clear pathologic fluids stands out prominently the group of the tuberculous meningitides, thirty-nine cases in all. Though as a rule clear, yet the fluid in two of these cases was decidedly turbid, and in five it contained blood, the result of injury to blood-vessels during puncture. In many that were allowed to stand for a few hours, a large fibrinous flocculus formed. This flocculus, when incorporated with the centrifugalized sediment on the smear preparation, was found often to contain in its meshes tubercle bacilli. The albumin content of the fluids as determined by the nitric acid contact test was rather large, varying from 1 to 3 mm. in thickness. In all but five of the cases there was a failure to reduce Fehling's solution. The globulin reaction was uniformly positive even in the early cases. The cytology in all but two was an abundant lymphocytosis, the two turbid ones already mentioned containing an excess of polymorphonuclear cells. One in fact was of purulent nature. No other bacteria were found in this specimen, and therefore it is not probable that the cytology was due to a secondary infection. Tubercle bacilli were found in all cases. In thirty-two, or 82 per cent. of the cases, they were found on the first examination, in six on the second and in one on the third. Therefore we are justified in saying that the presence of a fibrinous flocculus, absence of Fehling's reduction, the positive globulin reaction and an abundant cytology consisting mainly of lymphocytes should always be regarded as suspicious of tuberculosis, and a negative report given only when the search has been exhaustive. The above-mentioned results are no doubt due to the employment of a systematic method of persistent search in suspected fluids, two or three men hunting through the smear preparation for a long time, sometimes for a total of from three to six hours.

Animal inoculation is sometimes employed to confirm the bacteriologic findings when the clinical picture is atypical. In six instances the guinea-pigs on autopsy showed the typical lesions of the disease. The laboratory has been able to aid the clinician in many of these cases, in some of which the patients were admitted with diagnoses of typhoid fever, cerebrospinal meningitis, serous meningitis, sinus thrombosis due to middle-ear disease and even postconnubial insanity. The importance of finding the tubercle bacilli in these cases is apparent. In one case operation was contradicted by a report of the presence of tubercle bacilli in the fluid of a patient admitted to the hospital for lateral sinus thrombosis. So far as can be ascertained, all those cases in which tubercle bacilli were discovered in the spinal fluids ended fatally, while those in which this finding was negative followed a different course than tuberculous meningitis, or terminated in a manner to indicate other disease than tuberculosis of the cerebrospinal tract. These observations seem to disprove the prevalent opinion among general practitioners that the tubercle bacillus is found only occasionally in the cerebrospinal fluid and not until late in the disease.

Symptoms of meningeal involvement during the course of either bronchopneumonia or lobar pneumonia have always been a source of mental disquiet to the physician, and the question of the presence or absence of this complication can be decisively settled by lumbar puncture. In twenty-five cases of pneumonia showing meningeal symptoms, but four gave bacteriologic evidence of a true pneumococcic meningeal inflammation. Although the difference between the symptoms of meningeal irritation (so-called meningismus) and true pneumococcic meningitis are those of degree only, the marked differential characteristics of the spinal fluids determine the condition. When the cerebrospinal symptoms were due only to irritation, the fluids were found to be absolutely normal in every way. Here lumbar

* From the Laboratory of the Jewish Hospital of Brooklyn.

puncture relieved the symptoms of the patient affected as well as the mind of the attending physician; for as long as the chemical and cytologic findings were a low albumin content, a reduction of Fehling's solution and a negative globulin reaction with a sparse cytology of two or three lymphocytes per microscopic field, meningitis without question of a doubt could be ruled out.

The fluids of true pneumococcus meningitis differed in no way from other purulent fluids except in the biology of the infecting organism. Turbidity of the fluid with abnormal chemical reactions, and the presence of pus with pneumococci in the smear preparations and in cultures were constant findings. In three of the four cases in which the records were available, culture from the blood of these patients yielded the pneumococcus even before the meningeal symptoms became sufficiently severe to indicate lumbar puncture. This study tends to show that the occurrence of a true meningitis during pneumonia can be determined almost instantly at the bedside by means of a lumbar puncture; the presence of a turbidity means an infected fluid; a clear fluid denotes only meningismus.

Clear fluids were obtained in fifteen cases of typhoid fever, in three cases of Brill's disease, in three of tetanus and in seventeen cases of nephritis and uremia. In the nephritic group, there was always an increase in the quantity of the fluid, and in four there was a failure of Fehling's reduction. Otherwise the fluids evidenced no abnormalities. In typhoid fever it was noted that from none of the fluids was there cultured the typhoid bacillus, nor in any could be demonstrated the presence of typhoid agglutinins by the Widal method. The amounts of fluid obtained in the entire group ranged from 6 to 65 c.c.

In serous meningitis, poliomyelitis, poliencephalitis and traumatism of the brain and skull, the latter including two bullet wounds, five concussions and four fractures of the skull, the common finding was an increase in the intraspinal pressure as evidenced by the large amounts of fluid obtained on puncture. The poliomyelitis and poliencephalitis cases, twelve in all, showed differences from the normal only in relation to the duration of the disease; the early cases (early from the point of view of date of hospital admission, that is, about one week after the onset of the disease) gave a marked lymphocytosis; the late cases gave a normal cytology. There were five such early cases, and all gave positive globulin reactions with a turbid appearance of each fluid. The three cases of serous meningitis gave negative findings. The ten traumatic cases varied. One was bloody and two were turbid, the latter yielding on cultures the *Streptococcus pyogenes*. No other abnormalities were noted.

Four syphilitic fluids were examined. In all the intraspinal content was greater than normal, the albumin ring was increased and the globulin test was positive. The cytology consisted of numerous lymphocytes and some degenerated endothelial cells. The complement-fixation test for syphilis was made in three cases, and these were positive. In two the same test was found to be positive in the blood, and in one, negative. This result is in accordance with the prevailing opinion that in cerebrospinal syphilis, although the blood may not contain to any appreciable extent syphilitic complement-fixation substances, lumbar puncture and an examination of the cerebrospinal fluid may be necessary to substantiate a diagnosis of general paresis, tabes or cerebrospinal syphilis.

Examination of the turbid fluids was less complicated than that of the clear specimens, because bacteriologically the findings were usually quite definite and the chemical tests were always abnormal.

Under this head there are seventeen cases of epidemic cerebrospinal meningitis. In this group, careful study showed that these fluids differed in no way from other infections with pyogenic organisms except that the exciting factor was the meningococcus. After repeated use of Flexner's serum it was noted that the number of bacteria diminished; most of them became intracellular, swollen, showed signs of degeneration, grew poorly on culture mediums, and in favorable cases finally disappeared. The pus cytology gradually gave way to a lymphocytosis, and that was finally replaced by a normal cell content.

In twenty-four cases of ear and nose diseases and local brain lesions lumbar puncture revealed an interesting set of conditions. There were found infections of the cerebrospinal system in eleven cases due to the *Streptococcus pyogenes*, in one to the *Staphylococcus pyogenes aureus*, in one to the *Diplococcus pneumoniæ*, and in one to the *Bacillus mucosus capsulatus*. These infections followed mastoiditis, ethmoid and frontal sinus operations (performed in dispensaries) and subdural abscess. All these fluids showed the general characteristics of the infected type already described. In ten cases the findings were normal.

Included in the turbid fluids are twenty-two bloody specimens; these naturally were useless for diagnostic aid. In this connection we might sound a note of caution. In order to obtain reliable and definite information from the examination of a cerebrospinal fluid, it is of utmost importance that the specimen be free from blood, for the reason that the slightest amount of blood in the fluid submitted for examination interferes with the chemical and cytologic studies. We have observed that although the production of even a considerable hemorrhage into the spinal canal does not apparently inconvenience the patient, the blood may remain there for a comparatively long period of time, and in lumbar punctures done even a week or two later may betray its presence on test. That the presence of blood-serum from blood contamination may interfere with the cultural studies is also to be borne in mind.

The remaining eighty-three fluids are from patients suffering with a variety of general conditions; in these the puncture was done either for aid to diagnosis or for the relief of meningeal symptoms. This group, however, contains a number of fluids which though otherwise normal, showed a large lymphocyte content. The number of these cases was about thirty. We refer to the cases of intestinal auto-intoxication characterized by meningeal symptoms, and resembling tuberculous meningitis. A few of these fluids gave a positive globulin reaction, but persistent search in all failed to reveal the presence of tubercle bacilli. Three of these fluids were injected into guinea-pigs with negative results. On many of these patients repeated lumbar punctures were done (in one case seven times), and the fluids were examined again and again without finding the tubercle bacillus. Every one of these patients recovered. This class demonstrates that there are types of cases simulating tuberculous meningitis, in the spinal fluids of which tubercle bacilli cannot be found, and in which to further prove that they are not tuberculous meningitis recovery takes place.

Note is here made of the fact that from none of the fluids could the influenza bacillus be recovered, though

in suspected cases the greatest care and the most favorable mediums were employed.

This leaves us with fifty-six fluids which cannot as yet be classified on account of insufficient data, and concludes the observations on the study of 426 fluids obtained from 317 cases.

Briefly, the following practical facts can be formulated from this study:

Turbidity of the fluid, when not due to the presence of blood, means an acute infection of the cerebrospinal system, and bacteriologic examination reveals the causative organism. Rarely, chronic inflammation or tuberculous meningitis gives a turbid fluid.

A clear fluid with the failure to reduce Fehling's solution, a positive globulin reaction and abundant lymphocytosis usually means tuberculosis, especially if in addition there is formation of a fibrinous flocculus on standing.

Cases of intestinal auto-intoxication with meningeal symptoms may yield fluids chemically and cytologically resembling tuberculous ones.

Search for the tubercle bacillus in suspected fluids must be persistent and exhaustive.

In typhoid fever, Brill's disease, pneumonia and occasionally in infections of other etiology in which the meningeal symptoms are a conspicuous part of the clinical picture, examination of the spinal fluid will not show the existence of infection of the cerebrospinal tract, the symptoms being due to what is termed meningismus. The latter is probably an irritative condition only.

In pneumonia, when infection does occur, the findings differ in no way from those of other pyogenic fluids, except that the causative organism is the pneumococcus.

In poliomyelitis, polioencephalitis, serous meningitis and in tetanus, an examination of the cerebrospinal fluid possesses a negative value in that the fluid does not point to any specific infection.

In cerebrospinal syphilis one may obtain a positive complement-fixation test when the blood-serum gives a negative reaction.

Diseases of, and operations on the ear and nose are responsible for a large percentage of infections of the cerebrospinal tract.

The presence of blood renders valueless the chemical and cytologic study of the fluid, and may interfere with the bacteriologic examination.

We have yet to meet a case which will result in what is commonly termed dry tap.

Lumbar puncture in the experiences recorded is a harmless procedure and an invaluable aid to diagnosis and treatment in general medicine.

We wish to express our appreciation and deep sense of obligation to the visiting and intern staff of the hospital for their hearty cooperation in facilitating this study.

350 New York Avenue—191 Hart Street.

A NEW PREPARALYTIC SYMPTOM OF POLIOMYELITIS

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"Infantile paralysis" has been a common disease for years, yet without paralysis no diagnosis has been positive. The early clinical picture is that of infection or meningitis; when properly coordinated it is only suggestive of poliomyelitis, and even with lumbar puncture there is still some degree of doubt. During the recent epidemic in Los Angeles I made a few hundred observations of a symptom in sixteen cases which seemed absolutely characteristic of the preparalytic stage. The symptom has been of great value to me, and inasmuch as it is not mentioned in any text-book or the recent literature I am submitting it to the readers of THE JOURNAL for their criticism.

NEW SYMPTOM

The symptom referred to is a peculiar twitching, tremulous or convulsive movement of certain groups of muscles lasting from a few seconds to less than a minute. The amplitude of vibration is greater than a tremor, not so constant and long as a convulsion, and more regular than mere twitching, yet it has some elements of all of these. It usually affects a part or whole of one or more limbs, the face or jaw, but it may sometimes affect the whole body. The symptom may easily be overlooked in the beginning as it usually lasts less than a second and unless the patient is disturbed does not recur oftener than every hour or so. Later the duration of the spells lengthens to a few seconds, recurring also at shorter intervals. This condition is often accompanied by a peculiar cry similar to the hydrocephalic. At times there is a slight convulsive movement, just like a chill, as mothers say, during which time the child is apparently unconscious with eyes set for a few seconds, and then he apparently becomes perfectly normal again. This brief unconsciousness during which the child's eyes are set may occur without noticeable convulsive movements. It acts thus something like a petit mal. I have observed it as a twitching of the lips with tongue running in and out and a working of jaw, preceding bulbar cases.

RESEMBLANCE TO STRYCHNIN POISONING

The phenomenon resembles those found in light cases of strychnin poisoning except that the tetanic contractions are not general and do not last for a long time. They usually involve a set of muscles with one or more of the counter muscles not affected. There is also a similar hypersensitiveness of the skin. The least stimulation of the skin is followed by slight convulsive movements with rigidity of the arms, fingers separated and wrist flexed. When the patient turns in bed, through either an external stimulus or an effort to coordinate, the movements are quick and jerky, accompanied usually with slight convulsive movements of the limbs. The least noise produces in certain cases short series of convulsive movements similar to those in strychnin poisoning, only not so general.

RESEMBLANCE TO INFECTION NEUROSES

This symptom seems to be similar to the infection neuroses described by neurologists, of which tetany and chorea are good examples. It is not unreasonable to suppose that the presence of the virus of poliomyelitis may bring about effects similar to those of chorea and tetany. A local chemical or other irritation of the nervous centers is produced with subsequent fatigue and later recuperation resulting in the peculiar motor phenomenon which I have described as a preparalytic symptom.

THEORY OF NEW SYMPTOM

Having once observed this phenomenon which, until I began to look it up, I took to be a common symptom, I at once set out to find an explanation. According to the best authorities (Flexner, Lewis, Draper, Peabody and others), during the early stage the spinal fluid con-

tains great quantities of the virus which disappear more or less as soon as paralysis sets in. With this there is an increase in spinal pressure which throws the ganglia and cells into a highly excited state. Some areas are attacked more than others and we have a series of explosive contractions followed by rest similar to the artificial chemical excitation with fatigue manifested in a muscle-nerve preparation.

I have thus endeavored to explain the cause of the tremulous twitching, convulsive petit mal phenomena. Can we explain their peculiar local distribution? And can we explain the lack of coordination and the escape of one or more counter muscles? It will be remembered that the virus attacks not only the nerve tissue but also the vascular system. According to Peabody, Draper and Dochez there is a cellular exudate surrounding the vessels and pressing on the lumen. Edema with or without hemorrhages, large and small, into the cord is not uncommon. The blood-supply in the cord is horizontal while the nerve-supply to a group of muscles is not all derived from the same segment. The cord may be affected in some segments while not in others. This would account for the peculiar distribution and lack of coordination. The result of this condition is always noticeable in convalescence, when children have had to learn to walk and to feed themselves again, and others must learn again to talk.

The only reference found to this symptom in literature is made by Wickman, Zappert and Wilbur. Wickman observed one phase of it and but once in his many cases, while both Zappert and Wilbur observed only the muscular twitching in limbs. No one so far as I can learn has described the symptom I have just discussed. I have not worked out to my satisfaction the relation of the local symptom to the paralysis.

SOME FEATURES OF THE THEORY AND PRACTICE OF MEDICINE DURING THE SEVENTEENTH CENTURY

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(Continued from page 714)

THE PRACTICE OF MEDICINE

So much for the state of science and the theory of medicine in the early part of the seventeenth century. In regard to the practice of medicine at that period we must depend partly on indirect and collateral, rather than on direct and immediate, testimony. We must step a little aside and view it through other lenses. And the seventeenth-century literature gives us a large and harmonious idea of the usual and current conduct of medicine, for in addition to its scientific development, it produced some of the greatest names in the literature of the world, Shakespeare and Burton, Sarpi and Bacon, Sir Thomas Browne and Milton, Corneille and Racine, Molière and Cervantes. Still as one must go to Aristophanes for a picture of Athenian morals and customs during his period, so it is in Molière and Lesage that one finds the truest pictures of contemporary physicians and of the relations that they sustained to the people, during the period under investigation.

We must confess that at this time the general attitude toward the profession was one of hostility, and deservedly so. Medicine had not at all kept up with the progress of humanity and civilization. No one had arisen to revive the method or to dispute the authority of Hippocrates. The younger Scaliger, who died in 1609 and who was a friend of Montaigne and a pupil of George Buchanan, had discredited Galen, whom he styled *fimbriae Hippocratis*, the fringe of Hippocrates, but Hippocrates was still the ultimate authority in medicine. His hypotheses still ruled, though they were stamped with the name of Galen, and his precepts still prevailed. But shrewd as was his insight and wise as were his precepts, they had held the stage too long. Their spirit was long since gone and nothing but the letter remained. Authority is as fatal to medicine as it is to religion, and medicine at least was still held in subjection to a great name. Molière found in the physicians of his time a delightful field for the exercise of his humor. Indeed, it is said that in the group of physicians who held the curious consultation in "L'Amour Médecin," the features of the four principal court-physicians are plainly to be discerned. M. Guy Patin in his "Letters" says that Molière "did not even exaggerate the customs of the physicians of his time." To be sure, it might reasonably be objected to this testimony that while M. Patin is willing to vouch for Molière, no one seems to come forward to do the same for him. Still, the portraits of Molière are inherently probable or M. Patin's evidence alone would be of little value.

"But," said the king one day to the dramatist, "you have a physician yourself, M. Molière. What does he do for you?"

"Sire," replied Molière, "he comes to see me and we talk together. He gives me advice, I neglect to follow it and I get well."

To demonstrate how fully the practice of medicine was drawing its nourishment during the seventeenth century from the inspiration of Hippocrates twenty centuries earlier, I shall translate a few passages from Molière. In "M. de Pourceaugnac" the apothecary extols the rigid observance of the rules of medicine as exemplified by his friend, the physician of the play. He says:

> *Apoth.*—It is not because we are such good friends that I say so, but it is a pleasure, a genuine pleasure, to be his patient, and I would rather die under his care than get well under that of another. For whatever may happen, you may be sure that everything is in proper order, and when you die under his care your heirs cannot reproach you.
>
> *Ersate.*—That must be a great comfort to a patient.
>
> *Apoth.*—It certainly is. One is sure of dying methodically. Moreover, he is not one of those physicians who prolong diseases. He acts quickly and loves to dismiss his patients.

In the next scene of the same play the physician, whose praises you have just heard sung, is summoned by a country lad to call on his father who is ill.

> *Countryman.*—Sir, his strength is almost gone, and he says that he suffers the greatest pain in the world in his head.
>
> *Doctor.*—The patient is a fool. In the disease that he has it is not in the head but according to Galen in the spleen that he should have pain.
>
> *Countryman.*—That may be, sir; but, moreover, he has had a diarrhea for six months.
>
> *Doctor.*—Good! That is a sign that he is loosening up inside. I will go and see him in two or three days, but if he dies before then, do not fail to let me know. It is in no way seemly for a physician to visit a dead man.
>
> *Country girl* (running up).—My father, sir, is getting worse and worse.
>
> *Doctor.*—That is not my fault. I am giving him medicines. Why doesn't he get well? How many times has he been bled?

Country girl.—Fifteen times, sir, within twenty days.

Doctor.—Fifteen times?

Country girl.—Yes, sir.

Doctor.—And he is not yet well?

Country girl.—No, sir!

Doctor.—That proves that the disease is not in the blood. We will then purge him an equal number of times to find out whether it may be in the humors, and if that does not help, we will send him to the baths.

In "L'Amour Médecin," Lucinde loses her appetite, through disappointed affection, and her father, Sganarelle, calls in four physicians, MM. Desfonandès, Tomès, Macroton and Bahis, under which names are thinly disguised MM. Desfougeras, Esprit, Guenaut and Dacquin. The maid Lisette recognizes M. Tomès and says in surprise:

Lisette.—Ah, sir, are you here!

Sganarelle.—You know the doctor, then?

Lisette.—I saw him the other day at the house of the friend of your niece.

Tomès.—And how is her coachman getting on?

Lisette.—Fine. He is dead.

Tomès.—Dead!

Lisette.—Yes.

Tomès.—That is not possible.

Lisette.—It may not be possible, but it is true.

Tomès.—He cannot be dead, I tell you.

Lisette.—And I tell you that he is dead and buried.

Tomès.—You are mistaken.

Lisette.—I saw him.

Tomès.—It is impossible. Hippocrates says that such diseases end only on the fourteenth or the twenty-first day, and it is but six days since he fell ill.

Lisette.—Hippocrates may say what he pleases, but the coachman is dead.

The four physicians then hold their consultation over the indisposition of Lucinde.

(They sit down and cough.)

Desfonandès.—Paris is an enormous city, and one must travel long distances for a little money.

Tomès.—I must confess that I have an excellent mule for the road, and one would hardly believe the distance that I ride him every day.

Desfonandès.—And I have a wonderful horse. He is an animal that never tires.

Tomès.—Do you know the distance that my mule has made to-day? I went first down in front of the Arsenal, from the Arsenal to the end of the Faubourg St. Germain, from there to the bottom of the Marais, then to the Porte St. Honoré, then to the Faubourg St. Jacques, afterward to the Porte Richelieu and from the Porte Richelieu here. And from here I must go to the Place Royale.

Desfonandès.—My horse has gone as far as that to-day besides a journey to Rueil to see a patient.

Tomès.—By the way, what part do you take in the dispute between the two physicians Théophraste and Artémius? That is a quarrel that is dividing the whole profession.

Desfonandès.—I am on Artémius' side.

Tomès.—So am I. Not but that his advice, as was manifest, killed the patient, nor but that the advice of Théophraste was much better; still, he was wrong under the circumstances, for he ought not to have had a different opinion from the elder physician. What do you say?

Desfonandès.—Certainly. One must always observe the necessary formalities, whatever may happen.

Tomès.—For my part, I am rigid and inflexible unless it be among my friends. One day three of us were called in consultation with an outside physician, when I blocked the whole affair and would not suffer an opinion to be expressed unless due order was observed. The case was urgent, but I refused to give way, and the patient died during the dispute.

Desfonandès.—You gave them a good lesson and showed them their folly.

Tomès.—A man dead is only a dead man, and is of no consequence, but a rule neglected brings disrepute on the whole profession.

Sganarelle (rushing in).—Gentlemen, my daughter is getting worse. I beseech you, tell me what you have decided on.

Tomès (to Desfonandès).—It is for you to speak.

Desfonandès.—No, sir. Speak first, if you please.

Tomès.—You are too polite.

Desfonandès.—I will not be the first to speak.

Tomès.—My dear sir!

Desfonandès.—My dear sir!

Sganarelle.—For God's sake, gentlemen, lay ceremony aside. The case is urgent.

Tomès.—Sir, we have with mature reflection, considered the illness of your daughter. My personal opinion is that it proceeds from an undue heat of the blood, and my advice is that she be bled as soon as possible.

Desfonandès.—I on the contrary declare that her illness is due to a decomposition of humors caused by overeating, and my advice is to give her an emetic.

Tomès.—I contend that an emetic will kill her.

Desfonandès.—I am sure that bleeding will put an end to her life.

Tomès.—And this is an example of your ability!

Desfonandès.—It is. I am your superior in every department of learning.

Tomès.—Do you remember the man you killed the other day?

Desfonandès.—Do you recollect the woman you sent to the other world last Tuesday?

Tomès (to Sganarelle).—I have told you my opinion.

Desfonandès (to Sganarelle).—I have given you my advice.

Tomès.—If your daughter be not bled, she will die. (Exit.)

Desfonandès.—If you bleed her, she will not live fifteen minutes. (Exit.)

Here's a how-de-do! Here's a state of things! Of course this is a comedy, and the daughter was in no danger of death. But it was no comedy to the consulting physicians. Earnest enough in all conscience they were, and sincere enough, too, doubtless, in their opinions. But it was a time when medicine was a reminiscence merely; a dull, blind servility to rule and creed, which had once been alive and generous and beneficent; which was again to become alive and generous and beneficent, but was for the time being the thing that Molière depicted. When in the same play M. Macroton gives his opinion of the daughter's case he adds, with a solemn drawl:

Macroton.—Not that your daughter may not die withal, but at least you will have done something, and you will have the consolation of knowing that she dies according to the rules.

To which M. Bahis hastens to add:

Bahis.—It is better to die according to the rules than to escape death by violating them.

Could pedantry go further? Practical pedantry perhaps could not. Speculative pedantry seems to have no limit, but it reaches its ultimate expression, its highest articulate utterance, in the character of the young physician, Dr. Thomas Diafoirus, in "Le Malade Imaginaire."

Young Dr. Diafoirus is a suitor for the hand of Angélique, the daughter of Argan. The elder Diafoirus, also a physician, brings his son to the house of Argan for the formal betrothal. After the first ceremonious greetings Diafoirus *père* says to his son:

Diafoirus.—Come forward Thomas. Make your compliments.

Thomas.—Is it proper to commence with the father?

Diafoirus.—Yes.

Thomas.—Monsieur, I am come that I may salute, recognize, cherish and revere in you a second father, but a second father to whom I venture to declare myself more grateful than to the first. He indeed begot me, but you have chosen me; he received

me by necessity, but you have accepted me by your favor. What I have of him is a work of the body, but what I have of you is a work of your will; and as the faculties of the spirit are above those of the body, so much the more am I indebted to you —so much the more do I prize that prospective relationship in which I come to-day to render you, in anticipation, my very humble and very respectful duty.

When the young lady is called forward to greet her fiancé, he mistakes her for her mother and begins:

Thomas.—Madame, it is with justice that heaven has granted you the name of belle-mère, since—

Argan.—That is not my wife, but my daughter to whom you are speaking.

Thomas.—Where is she?

Argan.—She will come in soon.

Thomas.—Father, shall I wait until she comes?

Diafoirus.—Make first your compliment to the young lady.

Thomas.—Mademoiselle, as the statue of Memnon breathes forth a harmonious sound when it is illuminated by the first rays of the rising sun, so, precisely, do I feel myself animated by a sweet rapture at the appearance of the sun of your beauty; and as the naturalists inform us that the flower called heliotrope turns without ceasing toward that star of day, so my heart will henceforth turn without ceasing toward those splendid stars, your adorable eyes, as to its single pole. Suffer me then, mademoiselle, to place to-day on the altar of your charms, the offering of my heart, which neither desires nor solicits any other glory than to be, mademoiselle, for my whole life your very humble, very obedient and very faithful servant and husband.

In his character as a physician Thomas sustains his promise as a man. His father bestows on him the well-deserved praise "of binding himself blindly to the opinions of the ancients, and of never desiring to comprehend or even to hear the arguments about the pretended discoveries of the century, respecting the circulation of the blood and other opinions of the same paste."

Thomas, that he may be seen to merit his father's eulogy, at once draws a wad of paper from his pocket and offers it to Angélique saying:

I have here a thesis in which I take issue against the "circulators," and, with due permission, I will venture to present it to mademoiselle as the first fruits of my mind. Moreover, also with due permission, I will invite you for your amusement to come, one of these days, to witness the dissection of a subject on which I am to lecture.

Among all these fopperies and affectations of learning, it is refreshing to hear the clear voice of common sense in the utterances of Béralde, the brother of the patient, Argan. Béralde says:

When a physician talks to you of rectifying the blood, of tempering the bowels, and the brain, of unloading the spleen, of readjusting the chest, of repairing the liver, of fortifying the heart, of reestablishing and conserving the natural heat, and of possessing the secret of prolonging life beyond the limits of old age, he is singing you the romance of medicine. But when you come to the test, you will find nothing of all that. These are merely fine dreams, which, when you wake, leave in your mind nothing but disgust at having believed them.

Molière's arraignment of medicine was severe but probably just. Gil Blas, you will remember, learned in a few words all of the art of healing that Dr. Sangrado thought it essential for him to know. Sangrado said:

Other physicians are of the opinion that the healing art is learned by the painful study of a thousand sciences as useless as they are difficult. My intention is to shorten this long road and to save you the trouble of studying physics, pharmacy, botany and anatomy. Know, then, that to cure all kinds of diseases nothing is necessary but to bleed your patients and to make them drink hot water. This is the great secret for curing all the illnesses on the earth. This marvelous secret, which I impart to you and which Nature has not been able to conceal from my profound observations, while she has remained impenetrable to my companions and colleagues, consists simply of two things, bleeding and hot water, both in abundance. I have nothing more to teach you. You now know the whole of medicine from root to branch, and if you follow my precepts, you will be as great a physician as I am.

Needless to say, so easy a road offered no temptation to stray, and Gil Blas followed it faithfully. His results he did not hesitate to record. He called his visiting list his "mortuary register" or "book of the dead." Rarely did he make a third visit to any patient. What with letting blood and filling them to the throat with copious drenches of hot water, he usually found on going to the house a second time that his patient was being dressed for interment. He made more widows and orphans than the siege of Troy. One day he addressed Dr. Sangrado:

"Sir," said he, "I call heaven and earth to witness that I follow your method scrupulously, but for all that, my patients go to the other world. They seem to insist on dying if only to discredit our remedies. To-day I came across two more setting out to be buried."

"My son," Sangrado replied, "about the same thing happens to me. Seldom do I have the satisfaction of having a patient recover after falling into my hands, and if I were not so sure of the principles that I follow, I should believe that my system is utterly wrong."

"If you will believe me," suggested Gil Blas, "perhaps it would be well to change our method. Let us try, if only out of curiosity, some chemical preparations, antimony for example. The worst that could happen could be no worse than we have proved with our bloodlettings and hot water."

"I would be glad to do so," replied Sangrado, "but for one thing. I have just published a book in which I laud to the skies the frequent use of bleeding and hot water. Shall I discredit my own work? Shall I afford this triumph to my enemies?"

Dr. Sangrado is a recognized example of many physicians of the seventeenth century. He represents those of a lower, as the physicians of Molière represent those of a higher, intellectual type during the period that produced them. The more one rises from the Sangrado type the more complicated becomes the system of practice and that of theory alike.

Ambrose Paré in his "Opera Omnia" records a favorite fomentation that he used containing sage, rosemary, thyme, lavender, chamomile, melilot and red roses, boiled in white wine. He says:

When I was in Turin, I found a surgeon famed above all the rest for his treatment of gunshot wounds, into whose favor I found a way to insinuate myself, that I might have the recipe of his balm, as he called it, wherewith he dressed these wounds. And he made me pay my court to him for two years before I could possibly get the recipe out of him. In the end, thanks to my gifts and presents, he gave it to me, which was this, to boil down, in oil of lilies, young puppies newly born and earth worms prepared with Venice turpentine. Then I was joyful and my heart made glad, that I had learned his remedy.

Montaigne, a contemporary of Paré, who also lived nearly into the seventeenth century, says in his essay on "The Resemblance of Children to Their Fathers":

I was the other day in company, where one of my fraternity [that is, one of those who like him were afflicted with stone] told us of a new sort of pills made up of a hundred and odd

ingredients. It made us very merry and was a singular consolation, for what rock could withstand so great a battery? And yet I hear, by those who made trial of it, that the least atom of gravel will not stir for it.

The record and report of cases, as Bacon notes, were almost entirely neglected by the physicians of the time. Hospital reports were not yet, so far as I can discover, issued. In 1657, however, appeared a book by Dr. John Hall entitled "Select Observations on English Bodies, or Cures Empirical and Historical Performed on Very Eminent Persons in Desperate Disorders," from which much valuable information may be obtained as to the treatment of disease in the period we are considering. It is necessary to note that the rather pretentious title of the work was not chosen by Dr. Hall himself, who had been dead twenty-two years before the record of his cases was published by Dr. James Cook. Dr. Hall was the son-in-law of William Shakespeare, and was considered a very skilful and learned physician. The registration of his burial indicates this. The entry is simply in these words: "1635, Nov. 26. Johannes Hall, Medicus peritissimus."

This book is a record of his cases. One I shall reproduce, since it has the additional interest of recording an illness of his wife, Susanna, Shakespeare's daughter.

Observation XXXIII.—My wife was troubled with the Scurvy, accompanied with pain of the Loins, Corruption of the Gums, Stinking Breath, Melancholy, Wind, Cardiac Passion, Laziness, difficulty of Breathing, fear of the Mother (i. e. of hysteria), binding of the Belly and torment there, and all of a long continuance, with restlessness and weakness. There was given this bolus: ℞ Electuary of Tamarinds ʒ ss; Cream of Tartar ʒ i. To the Back was applied,

Emplastrum Oxycroceum, which freed her from pains of the Loins and Belly, Feby 9, 1630. The tenth day, taking cold, she had again miserable pain in her joints so that she could not lye in her Bed, insomuch as when any helped her, she cried out miserably; for which I used this Ointment:

℞ Capon's Grease, oil of Sweet Almonds, of Dill and Roses, Mucilage of the Roots of Althea, drawn with Mallow Water each ʒ i. Mix them. After anointing, the foresaid Plaster was applied with good success, for she was quieter all night; but yet in the morning she was troubled with wind. Then I gave her of Sennurtus's Electuary, which is thus framed: ℞ The Conserve of the tops and leaves of Scurvy Grass ʒ iii; the flowers of Bugloss, Clove, Gilly-flowers and, Damask Roses, each ʒ ss. The flesh of Candied Nutmegs, Citron Pills, candied and cut, each ʒ i; Honey of Juniper Berries ʒ iii; Confectio Alkermes ʒ ss; Syrup of Cinnamon, Syrup of Scurvy Grass or that of Forestus, sufficient to make an electuary, to which was added Oil of Sulphur, sufficient to sharpen it. For the constipation of the Belly was used this suppository: ℞ Honey ʒ i; Spec. Hiera Picra ℈ ii (this was aloes and canella); Troch. Alhand ℈ ss; Cummin Seed ʒ ss. Make a long suppository. For the cardiac passion was used Elect. Pierresarchon, Dose ʒ ss fasting. Yea, at any hour it was used, drinking the following stilled wine after it. ℞ Fumatory, Brookline, Watercresses, Scurvy Grass, Betony, Agrimony, Harts-tongue, each M ss (i. e. one-half manipulus or handful); Bark of Capparis Ash, Tamaris each ʒ ss; Roots of Elecampane, Polipody, each ʒ iii; Madder Liquoris, Calamus Aromaticus, Eringoes each ʒ ss; Yellow Sanders, Red Coral, Shavings of Ivory, each ʒ vi; Cloves, Mace, Cinnamon, Ginger each ʒ iii; Ceterach, Flowers of Broom, Rosemary, Marigolds, Epithyme each P. i (p = pugillus, an eighth part of a manipluss or handful); Juniper Berries ʒ i; Steel prepared according to Crato ʒ iv; White Wine lb. viii, etc. [Then followed minute directions about boiling and stirring and straining.] Dose is two to three spoonfuls in the beginning, which may be increased if there be need. And by these she was cured.

To-day the treatment would be lime-juice and spinach with a mouth wash of potassium chlorate.

The orvietanum, theriaca, or venice treacle contained sixty-one different ingredients, some of which were mutually antagonistic and many therapeutically incompatible.

Those were halcyon days for the apothecaries. Dr. Gideon Harvey, physician-in-ordinary to his majesty Charles II, wrote in 1676, in "The Family Physician and the House Apothecary," some comments on their profits from drugs:

I have oft seen bills of apothecaries risen to 20 pounds and sometimes 30 pounds in the time of a fortnight; I have known an apothecary's bill so extravagant that the sum at the bottom of his account amounted to 50 pounds in the space of thirty days. Not long since an apothecary of our suburbs brought in bills to nine patients for less than three-quarters of a year's physick, amounting to fifteen hundred pounds.

This is a sum almost equivalent in purchasing power to $25,000 to-day, and would amount to about $1,000 a month per patient. George Butler charged in his bill (in 1633) $7.50 apiece for some pills that he put up for Mrs. Style who had a sore leg. She took three and died during the night. Goodall gives many similar instances in "The Physicians of London," 1684. A Dr. Tenant took the precaution of dispensing his own medicine—a degrading thing for a physician in the seventeenth century to do—and in his bill "he charged for one pill at six pounds, and an apozeme (decoction) at the same price."

RIVAL CLAIMANTS TO HARVEY'S DISCOVERY

It is well known that others before Harvey had worked in the same field and had had stray gleams of the truth without attaining to a full comprehension of it. This list does not, speaking strictly, include the name of Vesalius, and yet the spirit that Vesalius invoked was of far-reaching importance. It extended beyond the realm of anatomy and laid hold of the true scientific method. It consisted in the recognition of the fact that science must be free, must disclaim tradition, and throw off the chains of authority. Before Vesalius came, the students in anatomy studied not the human body but Galen, as the students in theology studied not the Bible but St. Thomas Aquinas. Martin Luther was still living when Vesalius' great work on "The Structure of the Human Body" appeared in 1543. It is not likely that he ever saw a copy of it, and he would probably have had little interest in it if he had seen it; and yet what Luther had accomplished in freeing the individual conscience from the shackles of tradition, Vesalius almost emulated in freeing science from the authority at once of Galen and of the church. To him all science owes a debt of profound gratitude, for as Luther was the father of Vesalius, so Vesalius was the father of Harvey.

Before Vesalius, then, the teaching of anatomy consisted in the discovery of new meanings and new interpretations of Galen, and rarely in actual dissections. Vesalius brought to anatomy the practice of careful observation, and established the method on which physical science has since his time advanced in its uninterrupted course—the method of dissection as opposed to interpretation, of observations as opposed to authority. He raised aloft the book of Nature in place of the book of Galen, and opened up a new path in scientific work. "On the publication of the Fabrica, the pall of authority was once and forever removed. His results were impugned and indeed corrected by his followers and rivals, but they were impugned and corrected by the

method that he had introduced. The authority of Galen ceased to be invoked as the ultimate test of fact." The era of experimental science, thus inaugurated in 1543, followed the principle of induction which is now known to have guided the reasoning of men from primitive time. That principle Bacon merely formulated and systematized. That too was a great service, as it then became a conscious and understood process of reasoning, a weapon of thought and the key to modern science. It is true, as I have remarked, that before Vesalius, medicine had been a branch of philosophy and that afterward it became one of the physical sciences; but it is also true that with him the method of physical science had its origin.

To realize the importance of Harvey's theory, which opened up the channel to physiology and modern medicine, sweeping away the barrier that obstructed at its source the stream of medical science, we must for a moment examine the belief thus effectually destroyed. Foster[6] summarizes this as follows:

> The parts of the food absorbed from the alimentary canal are carried by the portal vein to the liver and are there converted into blood; here also the blood becomes endued with the natural spirits. From the liver it passes by the vena cava to the right ventricle, whence some of it passes through innumerable pores, like a sieve and invisible after death, to the left ventricle. As the heart expands it draws from the lungs, through the pulmonary vein, air into the left ventricle. This air, with the blood which has percolated into the left ventricle from the right, becoming subjected to the action of the innate heat of the heart, which is the source of animal heat, is elaborated into the "vital spirits" which flow from the left ventricle through the arteries to all parts of the body, flowing and ebbing through the same vessels, and having no connection with the blood in the veins save through the pores between the ventricles. Similarly the blood in the veins, bearing the "natural spirits," flows and ebbs from and to the right ventricle, passing into the lungs through the pulmonary artery and to all the parts of the body. The vital spirits produced in the left ventricle from the air and the few drops that enter from the right ventricle, are of a higher and more elaborate development than the "natural spirits" with which the venous blood is endued. There is still a third elaboration, of "vital spirits" into "animal spirits" in the brain, which, without any admixture of blood, are carried in a similar ebb and flow along the nerves, which were thought to be hollow during life and to close at death.

Such, briefly, was the philosophic conception of the circulation that with various glosses (among which may be mentioned a dispute as to the time of the ebb and flow, many physicians believing that the blood flowed all day and ebbed at night) and interpretations, held the scientific mind in bondage for many centuries. To this ebb and flow the term circulation could in no strict sense be applied. It was not a circulation but rather a passing of the blood to and fro. It seemed necessary to describe in detail, however briefly, this long-prevalent belief, since on an indistinct comprehension of it has arisen some uncertainty as to Harvey's right to the title of discovery of the circulation. On the words of Brutus to Portia,

> You are my true and honorable wife,
> As dear to me as are the ruddy drops
> That visit my sad heart,

the claim was founded that Shakespeare had divined the truth before Harvey. This claim was made by Thomas Nimmo, and was published in the second volume of the "Shakespeare Society's Papers." It is of course worthy of no consideration whatever.

The history of science presents no more interesting picture than the manner in which the way was smoothed to Harvey's discovery. Robert Boyle, a friend of Harvey and an eminent scientist himself, since he discovered the law of elasticity of the air, narrated the circumstances that led up to Harvey's discovery. He says:

> I remember that when I asked our famous Harvey, in the discourse which I had with him a little while before he died, what were the things that induced him to think of a circulation of the blood, he answered me that when he took notice that the valves in the veins of so many parts of the body were so placed that they gave free passage to the blood toward the heart, but opposed the passage of the venal blood the contrary way, he was invited to think that so provident a cause as Nature had not placed so many valves without design; and no design seemed more probable than that, because the blood could not well, because of the intervening valves, be sent by the veins to the limbs, it should be sent by the arteries and return through the veins, whose valves did not oppose its course at all.

The first step, however, was taken by Vesalius, and touched on the invisible pores that led a portion of the blood directly from the right ventricle to the left. In describing the heart he says:

> The septum of the ventricles, the thickest substance of the heart, abounds with little pits impressed on it on both sides. None of these can be perceived to penetrate the septum, however, and we are compelled to wonder at the handiwork of God, if it be true that the blood sweats from one ventricle to the other through passages which cannot be detected by the eye.

Vesalius thus dared to doubt the prevalent belief. The next step was taken by Servetus who notes that:

> There is no passage through the septum of the heart, but the blood is driven by a long passage through the lungs. It is in this passage rendered light-colored and from the pulmonary artery is poured into the pulmonary vein. Here it is mixed with the inspired air and by expiration is cleansed from its fumes. And so at length it is drawn in, a complete mixture, by the left ventricle through the diastole, stuff fit to become the "vital spirits."

The size of the pulmonary artery convinced him that it served some other purpose than the mere nutrition of the lungs, and the passage given shows that he had grasped something of the truth as to the pulmonary circulation. But the full significance even of the pulmonary circulation was not seen by Servetus. He merely intended to correct the opinion of Galen, and considered that only that portion of the blood which Galen had believed entered the left ventricle from the right by a process of transudation was what the pulmonary artery transmitted to the left ventricle through the pulmonary vein, while the rest of the blood fetched its round through the venous system every twenty-four hours. This was a step forward; but it was by no means the final recognition of the truth, even as to the pulmonary circulation.

The fate of Servetus was a sad one. The passage just quoted is from his "Christianismi Restitutio" a work on popular theology. He had written an earlier book on "The Errors in the Doctrine of the Trinity," for writing which he barely escaped the clutches of the Inquisition; while for this, his second work, he was seized and prosecuted by Calvin and burnt at the stake in 1553. He died at the age of 42 the Giordano Bruno of Calvinism.

Colombo, who was the professor of anatomy in Rome when he died in 1559, left in manuscript a book which

6. Foster, Sir Michael: Lectures on the History of Physiology, Cambridge, 1901.

appeared after his death, in which he appropriates the work of both Vesalius and Servetus without any addition of note to either. He differs from Vesalius in one point however, which alone would invalidate any claim he might have. "He opposed Vesalius in regard to the origin of the vena cava, asserting that it takes its rise from the liver, and not from the heart as the great reformer in modern anatomy had mentioned."[7] This is taken directly from Hippocrates' own words. In his book on "Aliments," he has said that "the root of the veins is the liver and the root of the arteries is the heart." Yet Colombo's work on "Anatomy" was of service in that it gave currency to the exposition by Servetus of the pulmonary circulation. In 1571 the "Quaestiones peripateticae" of Caesalpinus appeared. In this book he touched the very center and secret of the circulation—he touched it, but he withdrew his hand too soon. Not even to him was the full theory of the circulation revealed. His words are full of interest:

> Of the vessels ending in the heart, some send into it the material which they carry, for instance, the vena cava into the right ventricle and the pulmonary vein into the left; some carry material away from the heart, as the aorta from the left ventricle and the pulmonary artery, nourishing the lung, from the right. To each orifice are attached little membranes (valves) whose function is to secure that the orifices leading out do not let the blood in, and that those leading in do not let it out. It follows that when the heart contracts, the arteries are dilated and when it expands they are constricted. For if the arteries were dilated and constricted at the same time with the heart, it would follow that they would be dilated at the time when the material filling them from the heart was denied them, and constricted at the time when material was flowing into them from it. But this is impossible. They therefore dilate and contract in alternation with the action of the heart.

How fine and clear this is! And it is the earliest description of the heart's action in "emptying itself during systole into the aorta and the pulmonary artery, and filling itself during diastole from the vena cava and the pulmonary vein."

Twenty-two years later, in 1593, another book entitled "Quaestiones Medicae" appeared from the hand of the same writer. In this he approaches still nearer the truth without fully perceiving it. In it he calls attention to the fact that veins when ligatured swell on the far side and not on the near side of the ligature. "But exactly the contrary ought to happen," he says, "if the movement of the blood and the spirits took place in a direction away from the heart to all parts of the body. When a channel is interrupted, the flow beyond the interruption ceases; the swelling of the veins therefore ought to be on the near side of the ligature."

"Why isn't it?" he seems to ask himself. Indeed he gives the answer, but he does not fully comprehend it when given. The explanation he cannot yet make. The circle is not complete. It almost seems to us that he has given the explanation and as if the circle of the blood were complete, but that is because we look through our own eyes and not through those of Caesalpinus. He betrays himself at the very moment when we expect the final word of full comprehension. He continues:

> Now when we are awake the movement of the native heat takes place in the outward direction, but when we are asleep it takes place in the contrary direction toward the heart. We must therefore conclude that when we are awake a large supply of blood and of spirits is conveyed to the arteries and thence to the nerves. When we are asleep, however, the same heat is carried back to the heart, not by the arteries but by the veins. For the natural entrance into the heart is furnished by the vena cava, not by the arteries. For in sleep the supply of native heat to the arteries is diminished, but it bursts into them with vehemence when we wake, while the veins are more swollen when we are asleep and shrink when we wake, as any one may see who watches the veins in the hands. When we are asleep, the native heat passes from the arteries by that communication of orifices which we call anastomosis into the veins and so to the heart.

While I have somewhat condensed the statements of Caesalpinus in these quotations, yet I have been careful to leave every argument and every description, unshorn of its strength, in all its directness and in all its logical force, as fully as an advocate could have done in his behalf. But when all is considered, it is too little to establish his title. He apprehends the circulation, but he does not comprehend it. He sees the riddle but he does not solve it. He meets the truth full in the face, but he passes it by without recognition. He translates all the words, but he cannot put the sentence together.

And all this is because, while Caesalpinus seemed to hate the very name of Galen, while he declared himself willing to "maintain that everything that Galen affirmed was wrong and that everything that Galen denied was right," while he fancied that he had entirely emancipated himself from the control of the traditions of the ancient fathers in medicine, he yet saw through Galen's glasses, he was yet in the gall of bitterness. Dr. Thomas Willis, in his preface to the works of Harvey, says that the later meaning is apt to be read into the earlier words, and does not really represent the thought that was in the writer's mind as he wrote, but that which is in our minds as we read; moreover, "The world saw nothing of the circulation of the blood in Servetus, Colombo, Caesalpinus or Shakespeare, until after William Harvey had taught and written."

Fabricius, a younger contemporary of Caesalpinus, had tried to fathom the purpose of the valves in the veins. He said:

> In my opinion they are formed by Nature in order that they may to a certain extent delay the blood, and so prevent the whole of it flowing at once like a flood either to the feet or to the hands and fingers, and becoming collected there. For this would give rise to two evils; on the one hand the upper part of the limbs would suffer from want of nourishment, and on the other the hands and the feet would be troubled with a continual swelling. In order therefore that the blood should be everywhere distributed in a certain just measure for maintaining the nourishment of the several parts, these valves of the veins were formed.

These words of Fabricius, the greatest anatomist of his time, show how little impression Caesalpinus had made, and how far his pupils were from understanding the truth concerning the circulation. That was because he did not himself understand it.

A claim has also been entered for the credit of the discovery of the circulation in the name of Paolo Sarpi, but such a claim seems impossible to substantiate. Sarpi was an intimate friend of Fabricius and of Harvey as well, and of Galileo and Lord Bacon and many other men who were eminent during the early years of the seventeenth century. His name is perhaps as illustrious as that of any of his contemporaries, but his laurels were not won in the field of the physical sciences, and the validity of the claim that has been brought in his name, as anticipating the discovery of Harvey, is not capable of demonstration. Sir Michael Foster says:

7. Willis, Thomas: Life of Harvey.

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His claim is urged by Cornelius Consentinus, on whose statement alone it rests. Consentinus said that Sarpi, who was indeed versed in anatomy as in all the knowledge of his time, left among his manuscripts a theory of the circulation that proves his prior perception of it; and that he disclosed the fact to Fabricius who in turn informed his pupil Harvey. But Sir George Ent narrates the story differently. He says that the Venetian ambassador brought with him from London to Venice a copy of Harvey's book, a part of which Sarpi transcribed into his own note-book without any thought of claiming the credit of the discovery. This note-book, after his death, was found among his papers, and a claim entered in his name which he himself would never have sanctioned.

Candor, however, constrains us to remark that there is a strange and disquieting anachronism in this statement, clear and conclusive as it seems. Sarpi died in 1623, and Harvey's book did not appear until 1628. If to Harvey were granted the privilege of posthumous prayer, and if he continued after death to take an interest in the little triumphs of humanity, he might well ask to be delivered from the friendly offices of Sir George Ent and Sir Michael Foster. From erroneous premises to deduce a conclusion that shall be true, indicates the commission of a fatal fallacy, and constitutes a sharp attack on the truth itself. At the least, its detection suffices instantly to disable the argument. Not on false witnesses and an inaccurate chronology must be based the verdict in the case of Sarpi, but on the inherent improbability of his claim, on its lack of contemporaneous influence, and on the fact that it was never substantiated at the time, when the outcry against Harvey was so great that nothing was left undone that malice could suggest to invalidate his title to a discovery that envy sought to disparage, and enmity labored to annul.

We have thus examined the pretensions of all the claimants who are entitled to consideration except one, and his claim connot be examined, although it is in point of time the earliest of all. While a Christian emperor yet occupied the throne of Constantinople, Leonardo da Vinci was born near Empoli, in Tuscany. He was a man of most remarkable wisdom. There were few fields of learning in which he was not eminent. His "Last Supper" is considered one of the two greatest paintings in the world; his "La Gioconda" is the most famous canvas that was ever painted. In mathematics, botany, anatomy, fortifications, geology and engineering he was intimately skilled, and in some of them was centuries ahead of his time. He anticipated Bacon's recognition of observation and experience as the basis of all reasoning in science; he explained the theory of mechanical forces; many years before Copernicus he was acquainted with the annual motion of the earth; he described the camera obscura, the use of the iris, the mechanism of flight and the nature of colored shadows. He kept copious note-books, most of which have never been examined. They yet exist in manuscript, and the character of his claim to have anticipated Harvey must await the day when these old manuscript note-books may be deciphered. There is some hope that when that day comes, our knowledge of the mechanics of aviation will become illuminated, but there is no probability that another chapter will be added to the dispute concerning the circulation.

Such are the various claims that seem to threaten, however remotely, the title of William Harvey, and we have found them all insufficient to raise even a presumption of doubt as to its validity.

(To be continued)

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS*

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In 1906 the New York Board of Health supplied antimeningitis serum for use subcutaneously in cases of epidemic cerebrospinal meningitis, but it was found to be of slight avail and its preparation and use were discontinued. In July, 1910, after Jochmann, Flexner and Wassermann had proved its value when used intraspinously, the Rockefeller Institute gave the Health Department two horses immunized against the meningococcus, and a generous supply of antimeningitis serum. Since that time the Health Department has prepared it and offered the services of a consultant to every physician reporting a case of meningitis not in a hospital. In that way we have seen 247 cases, at least half of which were reported as epidemic cerebrospinal meningitis and the rest either as meningitis, kind not designated, or as tuberculous meningitis.

DIAGNOSIS

Table 1 shows what a large percentage of error there must be in the usual statistics of meningitis and how few cases of epidemic cerebrospinal meningitis there are in New York.

TABLE 1.—FINAL DIAGNOSIS OF CASES SEEN

Diagnosis	No. of Cases	Condition Suggesting Meningitis
Epidemic cerebrospinal meningitis	48	
Tuberculous meningitis	15	
Infantile paralysis	37	
Streptococcus meningitis	9	
Pneumococcus meningitis	3	
Influenzal meningitis	2	
Pneumonia	19	Rigidity of neck and Kernig sign.
Gastro-enteritis	5	
Typhoid	3	
Hysteria	1	
Acidosis	1	
Osteomyelitis	1	
Simple neurosis	1	
Tetany	1	
Serous meningitis	2	
Schönlein's purpura	1	Eruption.
Eczema	1	
Erythema multiforme	1	
Measles	1	
Typhus	1	
Syphilis of brain	1	Mental condition.
Cerebral endarteritis	1	
Miliary tuberculosis	1	
Encephalitis	1	Palsy.
Peripheral neuritis	1	
Internal hydrocephalus	1	Bulging fontanelle.
Toxic conditions	1	Convulsions.
Tetanus	1	
Diagnosis uncertain	19	
Pericarditis	1	
Normal child	1	

The cases of infantile paralysis that we have seen have been of the encephalitic rather than the myelitic type.

The streptococcus, pneumococcus and influenzal cases could not have been differentiated except by lumbar puncture, though the history of middle-ear disease, injury such as fracture of the skull, operation on the nose, etc., often made us suspicious.

In the cases of pneumonia, gastro-enteritis, hysteria, simple neurosis, acidosis, typhoid, osteomyelitis and

* From the Research Laboratory of the New York City Department of Health.
* Read before the Internal Medicine Section of the New York Academy of Medicine, Nov. 7, 1912.

serous meningitis, the rigidity of the neck, and in some cases a Kernig sign was probably what caused the physician to report the case as meningitis. In the case of Schönlein's purpura, one of the cases of typhus, and the eczema, erythema multiforme and measles cases, the eruption was largely responsible for the diagnosis of meningitis. Two of the cases of typhus had already been diagnosed and we were asked to do a lumbar puncture in order to relieve pressure. The mental condition seemed to have suggested meningitis in the cases of brain syphilis, endarteritis and miliary tuberculosis. The meningismus coming early, before there are any signs of pneumonia, is the most difficult of all these conditions to distinguish from true meningitis. Often by the time we reach the case the real diagnosis is apparent. In view of the mistakes made in diagnosis I shall give a brief summary of the main points to be considered.

Cases of epidemic cerebrospinal meningitis and infantile paralysis usually give a history of a sudden onset as against a slower onset in tuberculous meningitis. The patient's mental condition is generally good in meningococcus meningitis unless it is a fulminating case. In tuberculous meningitis there is often a history of irritability followed by increasing stupor from which it is often impossible to arouse the child. In infantile paralysis the patient is often apparently stuporous, but he can be roused and made to answer intelligently. Patients with epidemic cerebrospinal meningitis show marked rigidity of the neck; tuberculous patients are apt to have slight or moderate anteroposterior rigidity, but none laterally.

In infants the rigidity of epidemic cerebrospinal meningitis is so easily overcome as to make one often doubt its existence; but when the infant is turned on the side, the head is markedly retracted. We have found Brundinski's and MacEwen's signs much more useful than Kernig's. Brundinski's consists in the flexion and eversion of the legs and arms when an attempt is made to flex the head on the chest, and the drawing up of one leg when the other is passively flexed. MacEwen's is a change from the normal in the percussion note over the lateral ventricles, due to increased intraventricular pressure.

The fever is higher in infantile paralysis and epidemic cerebrospinal meningitis than in tuberculous meningitis. In cerebrospinal meningitis it runs an irregular course. In infantile paralysis it usually stays up only a short time and falls by lysis. Paralyses are not common in meningococcic meningitis, are often present one day and gone the next in tuberculous meningitis and usually improve slowly in infantile paralysis. Convulsions occur in all three conditions. Projectile vomiting is not uncommon with tuberculous meningitis

These are the general points of differentiation, but sometimes it is impossible to be sure clinically with which of the three conditions we are dealing. The surest means is by the examination of the spinal fluid, but this is not always certain. Epidemic cerebrospinal meningitis in almost all cases gives a cloudy fluid from which the infecting organism can be isolated. Both tuberculous meningitis and infantile paralysis give a clear fluid under increased pressure. If the tubercle bacilli can be found in the stained sediment after centrifugating the fluid, the diagnosis is easily made. Dr. Hemingway made a record in finding tubercle bacilli in cerebrospinal fluids at the Babies' Hospital, but there repeated punctures were done and sometimes a search of several hours was necessary. We rarely make more than one puncture, and seldom have more than an hour to spend searching. At the Babies' Hospital fluids were allowed to stand until a fibrin web formed. Ours are usually shaken a good bit before they reach the laboratory and we often have to centrifuge them at once. We usually trust to guinea-pig inoculation for the final diagnosis when we do not find the bacilli.

Table 2 shows the characteristics of spinal fluids.

TABLE 2.—CHARACTERISTICS OF SPINAL FLUIDS

	Pressure	Amount, c.c.	Appearance	Cytology	Bact.	Alb.	Glob.	Animal Inoc.
Normal	Normal.	5-10	Clear.	Very few cells.	Sterile.	±	—	Negative.
Meningismus	Increased.	10-100	Clear.	Very few cells.	Sterile.	±	—	Negative.
Infantile paralysis	Increased.	20-100	Clear; sometimes slight fibrin web.	Early polynucleosis; later lymphocytosis up to 95 per cent.; endothelial cells.	Sterile.	+ to + + +	+ to + + +	Negative or pneumonia.
Tuberculous meningitis.	Increased.	30-120	Clear; fibrin web.	Lymphocytosis up to 95 per cent.	Tubercle bacilli.	+ + to + + + +	+ + to + + +	Tuberculosis in 4 weeks.
Epidemic cerebrospinal meningitis	Increased.	5-120	Cloudy.	Polynucleosis up to 98 per cent.	Meningococcus.	+ + to + + + +	+ + to + + +	
Meningitis due to other organisms.	Increased.	20-100	Cloudy.	Polynucleosis up to 98 per cent.	Infecting organisms.	+ + to + + + +	+ + to + + +	

TREATMENT

The treatment of epidemic meningitis may be divided into prophylactic, specific and general. The prophylaxis consists in quarantining cases and looking for carriers. Last spring we were called to see a 6-months-old Greek baby. The mother had come over in the spring of 1911 at the time when there was an epidemic of meningococcic meningitis in Greece, and the baby was born six months later. A culture from the mother's nasopharynx showed abundant meningococci. She had never had meningitis and did not develop it. There was no way of being positive that the baby was infected by her for she may have acquired the meningococci from the baby; but it seems probable that she was the carrier.

Now, when we go on cases, we make cultures from the throats of those coming in contact with the patient. We have not yet had sufficient experience in ridding carriers of their meningococci to know what is the best means, but we hope to find out this winter. Dr. Sophian found that the injection of meningococcic vaccine was effective. Hachtel and Hayward in Baltimore used a spray of antimeningitis serum effectively. In some experiments which Miss Bertha Warren and I made at the Research Laboratory last winter we found that of the usual disinfectants used in the throat argyrol in a strength of from 15 to 25 per cent. was the most effective in killing meningococci *in vitro*.

The specific treatment consists in the intraspinal injection of antimeningitis serum. We always inject

the serum if we find a cloudy fluid on lumbar puncture, because if the disease is meningococcic meningitis the sooner the serum is injected the better, and it does no harm even if some other organism is the cause of the trouble. We always warm the serum and allow it to run in slowly by gravity. The amount administered depends on the amount withdrawn; we usually inject serum a little less in amount up to 40 c.c. than the cerebrospinal fluid withdrawn. Using change in blood-pressure as a guide to the dose, as suggested by Dr. Sophian, is probably a good thing, especially for those who have had little experience in administering the serum. I do not like to give a definite opinion about its value until I test it further. Most of our work is done in tenements with no one to help but the attending physician, so that its use is usually impracticable for us.

In an ordinarily severe case we do a lumbar puncture, draw off all the fluid we can and inject serum every day for four days. Further injections depend on whether the fluid is sterile or not, the patient's temperature, and his general condition. The rigidity of the neck is frequently late in disappearing, and if the patient is improving in every other way that does not disturb us. Dry taps occur now and then without disturbance of the communication between the meninges of the brain and cord. We had a case in Brooklyn in which after the first two or three times we repeatedly obtained no fluid; and yet 10 c.c. of serum ran in readily. The patient, a 6-months-old infant, seemed moribund when first seen, but recovered completely. We have had a serum rash in but one case. For cases that threaten to become chronic we prepare autogenous vaccine. Whether or not it helps we shall not be able to say until we have tried it longer.

Patients who develop basic meningitis, in which the communication between the meninges of the brain and cord is cut off, have never recovered in our experience. We have sent several such into the hospitals, and brain puncture was done; but it has been of no avail. Dr. Sophian had the same experience in Texas during the epidemic last spring.

For general treatment we always recommend the administration of hexamethylenamin (urotropin) because experiment has shown that after its administration formaldehyd is found in the cerebrospinal fluid. We advise the use of sedatives when a patient is in much pain or very restless, in order that enough sleep may be obtained. The diet should not be too limited, for the duration of the disease may be prolonged. The conjunctivitis sometimes present is best treated with argyrol. The bladder must be watched, for many cases develop retention. Meningococci are sometimes found in the urine, and this must be remembered in ordering the hygiene of the sickroom.

Before the use of the serum the mortality averaged 75 per cent. Our mortality since using the serum has been about 50 per cent. Six cases developed basic meningitis and five cases were fulminating. During an epidemic basic and fulminating cases do not occur in such a large proportion. Several patients we did not see until late in the disease, and many were receiving poor care as far as nursing went. Dr. Sophian went to Texas for the New York Health Department during the epidemic last spring, and he had a mortality of 28 per cent. in the hospital. Dr. Flexner's analysis of the results in 1,300 cases agrees very well with this. The prognosis is better for children than for adults.

AN UNUSUAL CASE OF LEUKEMIA

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The following case of leukemia presented several features of unusual clinical and pathologic interest. Like many cases of leukemia, its type was very irregular and in the absence of any definite knowledge of the etiology of this disease, its classification, if any be attempted, provides a wide field for discussion.

History.—The patient was a well-developed, robust man, aged 23, a hotel waiter, who had come under observation for the early secondary stage of syphilis eighteen months before his death. The inguinal nodes at this time were slightly swollen, but the spleen and liver were not apparently enlarged. The urine showed no special change. His blood was not examined at this time. He had suffered from gonorrhea five months previous to his coming to the hospital, but denied any other illness before this. There was no history of any previous enlargement of the lymph-nodes. He had originally come from Greece but had been in the United States for seven years. His parents were both alive and healthy. He had one brother who also gave a history of having acquired syphilis recently. In this brother the cervical and axillary nodes had recently become somewhat enlarged, and the spleen and liver were both slightly larger than normal. He had not, however, noticed these himself. The blood also showed practically the same picture as did the patient's in the early stages. He returned shortly afterward to Greece, so that the further course of his disease could not be traced. The patient remained in the hospital for five weeks, and was treated with intramuscular mercury injections. These were continued at his home for six months, and for the next four months he took internal mercury treatment.

Examination.—A few weeks after this time, about six months before his death, the patient reentered the hospital, complaining of swelling of the nodes of his neck, which had recently commenced. The axillary and inguinal nodes were also found to be slightly enlarged. The spleen extended 3 inches below the costal margin. The liver also was slightly enlarged, its lower border being palpable 3 inches below the costal margin in the right midclavicular line. His blood-serum gave a positive Wassermann reaction and the blood-count at this time showed marked anemia:

Red blood-corpuscles	3,400,000 per c.mm.
Hemoglobin	55 per cent.
Leukocytes: Differential count	52,000 per c.mm.
Polymorphonuclear leukocytes	10.5 per cent.
Transitionals-polymorphonuclears to myelocytes	3.4 per cent.
Myelocytes (finely acidophil granular)	5.6 per cent.
Eosinophil polymorphonuclears (coarse granular)	1 per cent.
Eosinophil myelocytes (coarse granular)	1.3 per cent.
Small lymphocytes	11.2 per cent.
Medium-sized lymphocytes	39.7 per cent.
Large lymphocytes	19.3 per cent.
Large mononuclears, clear cytoplasm, vesicular nucleus	8 per cent.
Medium-sized mononuclears, finely basophil granular	1 per cent.
Large-sized mononuclears, finely basophil granular	2.9 per cent.
Mast cells	0.7 per cent.
Normoblasts (compared with leukocytes)	4.1 per cent.
Megaloblasts (compared with leukocytes)	0.3 per cent.

The patient's weakness increased rapidly. The cervical nodes, as well as those in all the lymphoid situations throughout the body, became rapidly larger, and breathing through the nose became progressively more difficult. He developed effusions, which had frequently to be removed, from his left pleural cavity, and occasionally also from the right. The spleen increased considerably in size and the anemia became much more pronounced. The leukocytes in the blood varied from 30,000 to 73,000, a rather larger number being present just before death. The relative proportions remained about the same. The eosinophils, however, both polymorphonuclears and eosinophils, and the neutrophil myelocytes became slightly increased, the neu-

trophil polymorphonuclears slightly reduced, while the large, finely basophil granular mononuclears rose finally to 8.9 per cent. The number of normoblasts remained proportionately about the same, but the megaloblasts had increased to 2.7 per cent. on the day of the patient's death. The red blood-corpuscles had become progressively reduced, as also had the hemoglobin, the color-index, however, being always under 1. No malaria parasites were found in the blood at any time. The temperature had a slight daily variation, as an average rising in the evening to between 99.5 and 100 F., but sometimes reaching 100.8 as a maximum and 97.6 as a minimum. Various medications, including arsenic, mercury and iron, were used with no apparent improvement. The patient died in an extremely asthenic but well-nourished condition.

Necropsy.—A few hours after death, the lymph-nodes all over the body were found greatly enlarged, firm, elastic, more or less discrete, and of a pink color, although some were dark purple from hemorrhage. In the axillae and groins some of these had attained the size of a hen's egg. Microscopically, the nodes were shown to be enlarged, not only by infiltration of cells from the blood, but also by an active proliferation locally.

An opening into the thorax revealed several large lymph-nodes in the anterior inner part of the right vault of the diaphragm. One large hemorrhagic node was situated at the inner anterior part of the left vault, close to the attachment of the pericardium. The outline of the pericardium was regular and its outer surface smooth; on section, it was found to be enormously thickened. Posteriorly it measured 5 mm. in the middle and 1 cm. in the upper part. The lower portions in the region of the apex were only moderately thickened. Anteriorly, however, between the levels corresponding to the fourth rib and the upper border of the manubrium sterni, there was a special thickening, about 4 cm. in diameter. This was in direct continuity with the pericardium and extended below the level of the fourth rib, gradually becoming thinner toward the apex, where it was only about 3 mm. in thickness. This extensive pericardial thickening was firm, apparently fibrous and of a pale yellowish-pink color. In its upper part it included several small lymph-nodes, into some of which there were hemorrhagic extravasations. The bronchial nodes were considerably larger, some of them also being dark red from hemorrhage. Microscopically, this condition in the upper part of the pericardium was found to be composed for the most part of fairly dense fibrous tissue, which included very frequent, rather ill-defined, lymphoid foci which resembled closely the structure of the hyperplastic infiltrated lymph-nodes in other situations. This mass did not correspond to a tumor growth, but seemed to be the result of hyperplasia of the anterior mediastinal nodes and most probably also of the thymus. No Hassall's corpuscles, however, were found. In addition to this lymphoid hyperplasia, the thickening around the pericardium was associated with an extensive chronic inflammatory matting, and leukemic infiltration, also, to some extent had assisted in the process. The inner surface of the pericardium was smooth and there was no excess of fluid in the pericardial sac. There were no evidences of tuberculosis in the nodes throughout the body or in the pericardial thickening. Nor were there any signs which made syphilis in any way a certain factor; no spirochetes were found in any of the tissues examined in various situations throughout the body. The left pleural cavity contained a large amount of blood-stained fluid. The pleura showed a chronic thickening due, as seen microscopically, to leukemic infiltration and chronic inflammation. The heart was dilated and flabby.

The spleen weighed 900 gm. and was 21 cm. long by 14 cm. wide. It was of a dark reddish color and moderately firm. The malpighian bodies were markedly enlarged, appearing as white spots through the section. Microscopically, the perivascular spaces were considerably distended by accumulation of cells. The sinuses also were frequently almost filled, for the most part with small mononucleated cells. All the types seen in the blood were to be observed in these sinuses. There seemed, however, to be a very considerable proliferation of the lining endothelium. In some of the cells of this proliferation there were apparent distinct evidences of new formation of nucleated red blood-cells. Some of the endothelial cells also seemed to be the seat of a deposit of coarse eosinophil granules, at first, apparently deposited around or on one side of the nucleus. These coarsely granular cells often attained considerable size and all possessed a homogeneous small darkly stained nucleus. Some of them could be observed in process of direct division, and some also could be observed in the perivascular tissues. They never, however, assumed quite the appearance of the eosinophil myelocytes as observed in the peripheral blood.

The liver was moderately enlarged, weighing 2,150 gm. and, microscopically, showed a moderate deposit of hemosiderin pigment in the liver cells, and a considerable infiltration in the portal spaces, consisting mostly of lymphocyte-like cells, although the other types seen in the blood were also represented. Many of these cells were situated perivascularly, but the capillaries themselves frequently were crowded with nucleated cells. To some extent, in the perivascular spaces, but more in the interior of the vessel, there could be observed a relatively large number of coarsely granular eosinophil cells, mostly small, frequently appearing attached to the vessel wall, and containing small, round, homogeneous, darkly stained nuclei, which were similar to those observed in the spleen. The lining endothelium of the capillaries, in isolated places in the interior of the lobules, also showed considerable proliferation, some of this apparently assisting in the production of leukocyte types, such as were seen in the blood. To a small extent also the formation of nucleated red blood-corpuscles could be determined.

The kidneys were extremely enlarged, the left weighing 700 gm., the right 750 gm. They were, for the most part, pale, yellowish-pink and contained numerous small hemorrhages, chiefly in the cortex. Microscopically, the enlargement was due, not only to the hemorrhages, but also to a very extensive leukemic infiltration. In the perivascular spaces, besides a large number of small, mononucleated cells, small clumps of relatively large cells could frequently be observed, having some of the appearances of myelocytes, and generally containing numerous fine acidophil granules. Some of these myelocyte-like cells, although not quite resembling any type found in the peripheral blood, could also be seen isolated in the kidney capillaries. The intestines showed no specially abundant aggregations of lymphoid tissue. The bone-marrow was unusual for a case of leukemia, being dark red in color; in several situations examined it was almost wholly erythroblastic. There was a relatively small infiltration of leukocytes from the blood but only a very slight formation of polymorphonuclears, myelocytes and eosinophils. The reason for this almost exclusively erythroblastic marrow may have been that the destruction and loss of red blood-cells was specially severe, and that the usual site of new erythrocyte formation, the bone-marrow, had become practically entirely devoted to its production, assisted to a considerable extent, as has been mentioned, by the spleen and liver. A great proportion of the leukocytes found in the blood were evidently derived from some other source than the bone-marrow. The greater part of the lymphocyte-like cells, for instance, were evidently derived from proliferative processes in the lymph-nodes, and from endothelial surfaces in other tissues. In connection with the consideration of the development of the neutrophil and eosinophil myelocytes in the blood, it may be again noted that numerous coarsely granular eosinophil cells were found in apparently all stages of formation in the spleen, to a less extent in the liver and occasionally in the lymph-nodes.

Clumps of large, very finely acidophil granular mononuclear cells were also found in the kidneys. These clumps, of course, may have been formed by local proliferation from some of the cells which had penetrated from the blood and locally developed, but they also presented evidences that some of them had entered the blood subsequently. These may have been responsible for the production of some of the myelocytes observed in the peripheral blood. Occasionally also in the peripheral blood, myelocytes of both types were found in process of division. These evidences would lend support to Maximow's idea that myeloid tissue may be formed from any endothelial surface in the body, and not only from the bone-marrow. It is also pos-

sible to demonstrate experimentally that extensive extramedullary blood formation, both leukoblastic and erythroblastic, may occur in anemia produced by hemorrhage or blood-destructive poisons.

In conclusion, this case presented several interesting features, being for a considerable time a more or less mixed type of leukemia. Anemia, although usual in leukemia, was in this case particularly evident and was described by von Leube as "leukanemia" or leukemia of the red blood-cells. One might place it in the category described by von Leube as "leukemia" or leukemia of either variety associated with anemia of the pernicious type.

Lymphosarcoma may be associated with a moderate increase of lymphocytes in the blood, and there may also be considerable anemia. Sternberg has designated a type, which in some way resembles this case, as "leukocarcinomatosis," or an associated lymphosarcoma with leukemia. The present case, however, varies from the type described by Sternberg, in the blood-picture, and in there being no definite evidences of tumor growth in the anterior mediastinum, lymph-nodes or elsewhere.

Lymphadenoma has also to be considered as a possibility. The glandular enlargement was, however, too uniform. The great splenic enlargement was also against this. In some cases of lymphadenoma there may be a slight leukocytosis, but rarely to the extent found in this case. There was no evidence in the enlarged nodes or in the internal organs of the necrotic or fibroid nodules so usually observed in lymphadenoma. The mass in the mediastinum, which seemed markedly to thicken the pericardium, consisted of hyperplastic lymphoid cells, embedded in old inflammatory tissue, but suggested neither lymphadenoma nor lymphosarcoma.

The case seems to be placed most correctly in the category of leukemia. The leukocytes were never very greatly increased in number, to the extent so commonly observed in leukemia. The lymphocytes were increased proportionately more than any other type, yet all forms of leukocytes were increased quantitatively. The blood-picture was one of a mixed type, which is not altogether uncommon in leukemia. This case was, however, very rapid in its course. It illustrated well the different sources from which the various types of leukocyte can be derived.

The extreme infiltration and proliferation of leukocyte-like cells in the lymph-nodes all over the body, and in the kidney and spleen, with no such changes to any marked extent in the lungs, liver, intestine or other organs, are also of interest, indicating that the cause of this reaction was exerted specially in certain positions. The great enlargement and matting of the mediastinal nodes is quite unusual in leukemia, and, at least clinically, made the diagnosis a subject for considerable speculation. This leukemic condition followed soon after syphilis had been acquired, and although it has no place in the recognized sequelae of syphilis, yet the question has to be asked whether syphilis was merely a coincident process, a modifying condition or even the essential etiologic factor. The patient's brother had apparently developed the same condition, but also had a history of having acquired syphilis.

Whatever may have been the causative factor in this disease, there must have been a very severe toxic process which rapidly destroyed all the elements of the blood and had stimulated the extensive evidences of regeneration observed in the blood and certain tissues.

A COMBINED GRAVITY AND SYRINGE METHOD FOR THE INTRAVENOUS INJECTION OF SALVARSAN

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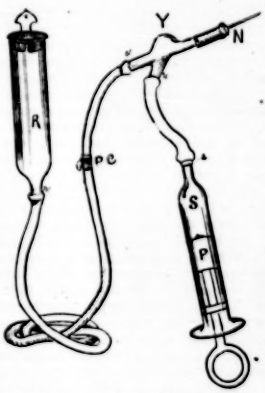
In order to overcome some of the difficulties of the gravity and the syringe methods and at the same time to retain the advantage of each, I have devised a simple and inexpensive apparatus for administering salvarsan intravenously.

The principal parts of this new apparatus are shown in the accompanying diagram. In the figure, *R* represents a glass cylinder to receive the solution which is to be injected. To cylinder *R* is attached at the point *r* a piece of rubber tubing provided with a pinch-cock, *P C*. This constitutes the gravity part of the apparatus.

The syringe portion of the apparatus is represented by *S*, which is the barrel of a glass syringe into which fits the piston *P*, consisting of a glass stem packed with heavy firm cord. The piston can readily be removed from the barrel so that the two parts can be easily and thoroughly cleaned. At the point *s* of the syringe is fitted a small piece of rubber tubing.



Apparatus combining the gravity and syringe methods, for the intravenous injection of salvarsan. *R*, reservoir, connected with Y tube at arm *a*; *S*, syringe, connected with Y tube at arm *b*; *N*, needle, connected with Y tube at arm *c*; *P C*, pinch-cock; this is of the one-motion variety and can be operated by one hand.

The essentially new part of the apparatus is a Y-shaped tube, *Y*. The stem constituting the base of the Y has protruding from the upper surface a small glass bulbous chamber connected with the main lumen. This glass chamber serves a double purpose. In the first place, it helps to maintain a continuous flow of fluid from the gravity chamber *R* through the needle while the syringe *S* is being filled with fluid; second, it serves as a trap for air-bubbles which may accidentally enter the apparatus at some point during its use. This chamber will absorb and detain about 2 c.c. of air.

To arm *a* of this *Y* tube is attached rubber tubing leading from the gravity cylinder; and to arm *b* is attached the tubing from the syringe. The exact connections will depend on which arm is employed, it being always most convenient to have the syringe on the outside, where it can be manipulated more readily. This makes the apparatus suitable for use on either arm, whereas the ordinary two-way stop-cock syringe is most conveniently used on the left arm, since in this position the stop-cock is directed upward.

The apparatus is used in the following way: After sterilization, the cylinder *R* is filled with some freshly

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distilled water which is to be used in preparing the solution of the drug. By opening the pinch-cock all the air is allowed to leave this portion of the apparatus. The cylinder is now suspended from a gravity pole. Now the syringe *S* is filled with water and the air driven out by pressing the piston upward. Then the connections with the Y tube are made as above described. By lowering the Y tube and opening stop-cock *P C* the air is driven out of the stem of the Y tube directly connected with the tubing leading to the cylinder *R*. The piston of the syringe is now propelled forward, thus driving out the remaining air from the Y tube. The apparatus freed of air is now ready for use.

The needle is inserted into the vein in the usual manner and the piston of the syringe drawn slightly toward the operator. A successful puncture is indicated by a reflex column of blood in base of the Y tube. As soon as this is noted, the Y tube is fixed to the patient's arm by applying a piece of adhesive plaster at the junction of the needle and the Y tube. With the pinch-cock closed, pressure is made against the piston, thereby reinjecting the column of blood back into the vein and slowly introducing fluid into the vein. Meanwhile an assistant has ample time to prepare and add the solution of salvarsan to the water in the cylinder *R*. When the syringe has been emptied of its contents, it is refilled by opening the pinch-cock and pulling the piston slowly. Experiments have shown that even during the period of filling the syringe the gravity continues to force the solution through the needle into the vein, so that at no time is there any stasis in the system.

The importance of this continual current cannot be overestimated, since it prevents the formation of clots and the clogging of the needle during the act of refilling the syringe, a difficulty often met in the ordinary two-way stop-cock syringe.

When the syringe has been refilled, the pinch-cock is again closed and the contents of the syringe expelled into the vein. The syringe can thus be filled and emptied by drawing from the reservoir cylinder *R* until the latter is completely emptied. If for any reason the Y tube or syringe should break or if any other difficulty be encountered during the administration, the whole may be quickly converted into a gravity apparatus by disconnecting the Y tube and inserting between the tubing leading from the reservoir *R* and that leading to the needle, a straight cannula.

The advantages of this apparatus over the others commonly in use are the following:

1. The principal parts of the apparatus are inexpensive and all glass, thus assuring cleanliness and easy sterilization.

2. The time of injection is reduced to a minimum and the amount of assistance needed greatly lessened; indeed, in case of necessity the whole procedure can be carried out by one person (by opening the pinch-cock while the solution is prepared).

3. The maintenance of a continuous current through the needle, which prevents clots and clogging of the needle.

4. The apparatus furnishes a safeguard against the entrance of air with the solution, by the bulbous portion of the *Y* tube, which will entrap and detain 2 c.c. of air.

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Cystitis in the Female.—Curable cystitis in the female is tantamount to infection from below—by way of the urethra. Obstinate cystitis is nearly always due to infection from above—by way of the ureter.—Fenwick in *Clin. Jour.*, London.

A CASE OF PSEUDOHERMAPHRODITISM

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History.—The patient, Lillian K., aged 4, was the fourth of five girls and weighed 8½ pounds at birth. She was breast-fed, walked at eight months, and suffered from marked bow-legs. The mother noticed that she was exceptionally active and rough in play with the other children. "She loved to run and jump like a boy." The mother first noticed a swelling in the right groin when the child was 2 years old. This caused no discomfort and completely disappeared in the recumbent position. There was a gradual increase in size and extension downward as the child grew older, until it finally reached to the right labium majus. At the age of 3 years the child contracted whooping-cough and a swelling appeared in the left groin, similarly located but smaller than that on the right. The family physician at this time made a diagnosis of double inguinal hernia and advised wearing a truss. Several were tried but on account of discomfort and inefficiency they had to be discarded. Operation was then decided on.

Family History.—The mother and father are first cousins. No history of lues or addiction to alcohol was obtainable in either. The mother has given birth to five healthy children and has had no miscarriages. A history of hernia or malformation in other members of the family was not obtainable.

Examination.—The general appearance of the child was that of a healthy little girl. On standing and increase of intra-abdominal pressure a swelling appeared in each groin above Poupart's ligament. The right labium majus was noticeably larger than the left. The swellings gave an impulse on coughing and reduced spontaneously on lying down. About midway in the left inguinal canal was felt a firm body about the size and shape of a bean. At the time this was thought to be an ovary or an enlarged lymph-node. Further examination was negative.

Operation.—Double herniotomy was done under ether. When the sac on the right side was opened a small body, which was bound to the labium by a strand of tissue, came into view. It was about the size of a bean, firm and completely covered by peritoneum of the sac. This had been overlooked in the external examination. It was thought to be an ovary or a testis, more likely the former. The index-finger, readily admitted to the abdominal cavity by the internal ring, could palpate no structure which might be taken for the uterus. The sac was ligated at the neck and all structures in the inguinal canal were removed. The internal ring was closed completely. On the left a similar condition was found with the glandular body located higher in the canal. The sac was separated and ligated and the other structures of the canal placed inside the abdomen. The internal ring was closed.

Examination of the external genitalia was then made. The right labium majus showed some rugae and might be taken for a rudimentary scrotal half. No sign of a penis was present and there was no distinct clitoris, the labia minora meeting in this position to form a fold. The labia majora and minora were well marked. There was a distinct vestibule, an annular hymen and just above the opening, the urethra. The vaginal opening was large and a probe could be introduced a distance of 2 cm. Careful examination revealed no other abnormality.

Pathologic Report.—The specimen removed consisted of a flat piece of tissue, one surface of which was covered by peritoneum. A cord-like structure extended down the middle and ended in an enlargement which seemed to surround a firm body at the lower extremity. This body was oval, whitish and measured 10 by 9 by 5 mm. Microscopic section showed this to be a testis with epididymis and vas deferens. The arrangement of the convoluted tubules was typical. The cells lining the tubules were very indistinct in outline and the nuclei stained poorly. The intertubular connective tissue was increased in amount and numerous groups of interstitial cells were present. Although numerous sections from different parts were examined, no trace of ovarian tissue was found.

This case is an example of the most common form of pseudohermaphroditismus masculinus. Numerous such cases are recorded which come to the surgeon primarily for herniotomy or removal of an inguinal tumor. Neugebauer[1] collected reports of forty-two herniotomies in which errors of sex were discovered. In thirty of these, girls or married women, herniotomy demonstrated testicles, and once herniotomy showed a female who had been brought up as a boy. In four other cases operation was done to determine the character of genital glands in labia majora of young girls and testes were found in each instance.

The question arises as to the proper method of procedure in such cases and it seems only rational, when such a condition is suspected, to remove first a piece from the gland for microscopic section under local anesthesia. Before puberty the ovary should be replaced inside the abdomen, and a testicle into the scrotum or its representative, as in the undescended testicle operation. Several operators have replaced the testicle inside the abdomen only to have a prompt recurrence of the hernia. After puberty it is best to remove a non-functionating undescended testis, because of its tendency to become the seat of a malignant growth. Numerous instances of removal of both testes in girls are recorded, but this does not seem justifiable before puberty. It is well known that the great majority of cryptorchid testes are hypoplastic and never produce spermatozoa, although a case is reported by Hirschfeld[2] of a pseudohermaphrodite, 20 years of age, with external genitalia of female type and no testes to be found, with active spermatozoa present in the secretion from the urethra after masturbation.

1605 Van Buren Street.

1. Neugebauer: Hermaphroditismus beim Menschen, 1908; Brit. Gyn. Jour., 1903, xix, 226.
2. Hirschfeld: Deutsch. med. Wchnschr., 1911, xxxvii, 1193.

A NEW AND INEXPENSIVE INTRATRACHEAL INSUFFLATION OUTFIT

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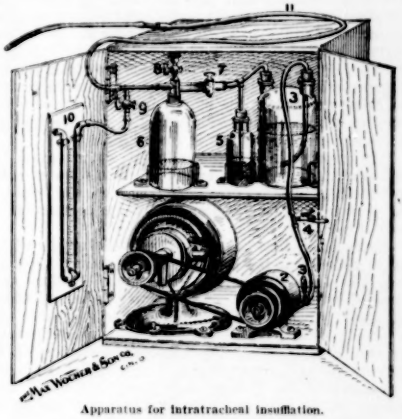
Intratracheal insufflation anesthesia is a method of etherization of such great value in selected cases that all hospitals should be equipped with an apparatus for its administration, and all anesthetists should be familiar with the technic. An apparatus of this sort is also of great value in resuscitative work as a substitute for artificial respiration. Most of the apparatus on the market, however, cost in the neighborhood of $250, which is prohibitive in many instances. The accompanying illustration shows an apparatus which has given perfect satisfaction in my hands, embodies all the advantages of practically every machine on the market, and can be profitably sold at about one-fourth the price of any other machine. The construction is exceedingly simple. It weighs about 40 pounds with the case and can be easily carried.

The apparatus itself consists of a 1/10-horse-power motor with a rheostat connected with a rotary blower (2), such as dentists use. This blower has an attachment (3, lower right-hand corner) by which, together with the rheostat on the motor, the most exact adjustment of the air-pressure can be made with a minimum of noise from the motor. From the rotary blower (2) the air passes through a Wolff bottle (3, upper right-hand corner), where it is washed. At 4 a T tube is inserted to which an ordinary foot-bellows can be attached in case of emergency or when no electricity is available. Connected with the tube leading from the Wolff bottle by a T is the safety arrangement (5), which consists of a bottle of mercury into which a glass tube dips, the distance being regulated according to the pressure desired. If it is desired to maintain a pressure of 20 mm., the tube dips 20 mm. into the mercury, and any pressure in excess of this, as during a fit of coughing or spasm of the glottis, will cause the excess air to bubble through the mercury. The current of air passes from the other limb of the T to the bottle (6) containing ether, which is so constructed that the valve (7), a three-way valve, allows the air to pass straight across without taking up any ether, or any part or all of the air can be made to pass over the surface of the ether. The turning of this one valve alone regulates the depth of anesthesia. At 8 is an ordinary automobile priming-cup which serves the double purpose of relieving the pressure at stated intervals, as is advised by Meltzer, and also as a means of filling the ether bottle (6). At 9 is attached the manometer (10) which is fastened to one of the doors of the case. The tube leading from the apparatus to the intratracheal catheter is shown at 11. Before using the apparatus it is well to attach the catheter which is to be used, then turn on the motor and by means of the rheostat and the escape valve (3, lower right-hand corner), on the blower obtain the desired pressure, which can be read off on the manometer.

After the anesthesia has been started the only manipulation necessary is to control the depth of anesthesia by valve 7. If



Apparatus for intratracheal insufflation.

desired, the pressure can be periodically released by quickly turning valve 8. Needless to say, this apparatus can also be used for pharyngeal insufflation and other methods of ether vapor anesthesia.

ANURIA—PERHAPS HYSTERIC

F. J. SHEAHAN, M.B., DELHI, ONT.
Surgeon to Michigan Central Railway; Coroner for Norfolk County

An interesting case of complete anuria of eight days' duration occurred in a young man of previous good health with the exception of occasional polyuria at varying intervals.

Anuria may develop in four ways: (1) following intense congestion in acute nephritis; (2) in renal stone when calculi block both ureters; (3) when the suppression is perirenal, resulting from (*a*) fever and inflammatory processes, (*b*) acute poisoning by phosphorus, turpentine or lead, (*c*) collapse after operations or injuries and in the collapse stage of cholera and yellow fever; (4) hysteric anuria.

The case which I propose to report does not come under any of these headings with the possible exception of the fourth. But the correctness of classifying this case under hysteric anuria I think is doubtful. The patient had at no time pre-

viously shown any hysteric tendencies; his family history on this score was entirely negative.

The patient, G. M., a farmer aged 25, height 5 feet 6 inches, weight 150 pounds, to all appearances in perfect health, with previous good history with the exception of a slight polyuria which occurred for about ten or twelve hours every month or two, developed the following condition: In the forenoon of Jan. 4, 1913, he noticed a diminution in the quantity of urine; by 3 o'clock that afternoon complete anuria had developed. This condition persisted until January 11. On the 5th and 6th he continued his work as usual; on the morning of the 7th he consulted me by telephone. I advised him to go to bed and promised to come to see him. On my arrival I found the patient dressed, seated by the stove and feeling quite comfortable, having experienced no pain or discomfort since the attack began. He stated that he had been in excellent health before the condition developed. On examination he was somewhat puffed under the eyes, but had no other objective symptoms. I passed a catheter; there was no urine in the bladder. The kidneys were not tender on pressure, or enlarged; temperature normal; pulse 82, with somewhat high tension; liver normal in size, with no tenderness; lungs clear; heart sounds clear; no enlargement; apex-beat in fifth interspace; stomach normal; bowels somewhat active; the patient had been taking salts; brain clear, active and apparently normal; pupillary reflexes normal. I advised him to come to my office for cystoscopic examination, which he did, making the trip without mishap. Examination with the cystoscope showed that the bladder was normal; the ureteral openings were clearly visible, but no urine was coming from either. I catheterized the ureters and without difficulty passed the instrument into the pelvis of each kidney. There was no obstruction. It was clearly a case of complete cessation of function of both kidneys. I advised him to continue the salts and drink water freely. I prescribed a saline diuretic and infusion of digitalis; cupped the loins; applied hot applications; employed pilocarpin to produce sweating; gave large warm saline enemas and irrigated the bladder with saline solution, thinking that possibly the act of voiding the fluid might have a reflex action on the kidneys.

These measures were apparently of no value. I saw the patient again on the 8th; his condition was much the same with the exception that he complained of periodic headache. I still persisted with the treatment described. On the 9th his condition was similar; there was some swelling of the ankles and wrists; the patient was quite bright and versatile. On the 10th his condition had decidedly changed; headache was pronounced and continuous; patient vomited twice during the day and once during the night; pupils contracted; temperature was 97.4; there was occasional twitching of the muscles; the patient had now developed a condition of extreme general anasarca such that he could not close his hands or get his fingers together; his lips protruded; his eyes were almost swollen shut; the skin of his legs was shiny and glistening, and his scalp would remain dented on pressure. I immediately ceased the measures I had been using and put him on a mixture of apocynum, 5 grains, iris versicolor ½ grain, hyoscyamus 4 grains to the fluidram. A 1-dram dose was given every three hours. About 3 p. m. on the 11th, exactly eight days from the beginning of the attack, the kidneys began to functionate; the patient passed urine very freely, so that in six hours he completely filled a 5-quart vessel; and after that at longer intervals he continued to void urine freely. By evening of the 12th at my next visit he was greatly improved. Since then he has progressed steadily.

Urinalysis: Color pale and watery; reaction slightly acid; specific gravity 1.006; albumin absent; sugar absent; microscopic urates, amorphous phosphates, a few oxalate crystals, some squamous epithelial cells, evidently from the bladder.

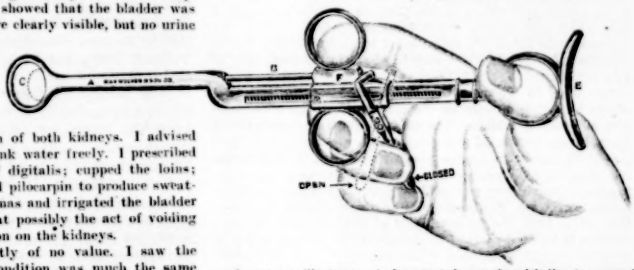
Could this have been hysteric anuria? From this point of view we must admit that there are very few cases in which the suppression is complete, as often on passing a catheter some urine will be found in the bladder. There are some interesting cases reported, one being by Charcot of a hysteric young woman in whom the suppression lasted eleven days, and another by Bailey of a young girl aged 11 who passed no urine from October 10 to December 12. On consulting the literature it will be noted that this condition develops in persons of hysteric tendencies who at times manifest the disease in other forms, and is more frequent in females. The question of hysteric deception must be taken into account. In this case, however, such deception is out of the question. Is it a condition which may develop as a complication of polyuria or transient polyuria? The latter symptoms he had occasionally shown and even then to no appreciable extent. Is it a forerunner of diabetes insipidus and produced by a toxemia coexistent with the early manifestations of that disease?

I think it was clearly demonstrated that the kidneys resumed their functions as the result of a powerful renal stimulant. The problem is, what was the cause of this condition? The question is an open one.

A NEW TONSILLECTOME

W. EDWARDS-SCHENCK, M.D., CINCINNATI

The pathologic tonsil has impressed the profession with the value of measures for its removal and this necessity has resulted in many efforts by capable operators to perform the operation as rapidly and safely as human ingenuity permits.



A new tonsillectome. *A*, fenestrated cannula with lips to conceal wire loop; *B*, cycletted rod. A short wire 3½ inches long is threaded into two cycletes forming a loop which is easily removed. There is no kinking of wire, as in the Beck instrument. *C*, wire loop drawn taut engaging tonsil ready for *D*, lever that locks carriage *F* to ratchet-screw *E*. Dotted lines show position of lever when carriage *F* is free from the ratchet-screw *E*. Note how easily the third finger locks or releases carriage *F* from ratchet *E*, thus leaving the left hand free. *E*, ratchet-screw with thumb-ring to complete removal of tonsil; *F*, carriage with finger-rings of sufficient diameter for the largest hand. This prevents instrument from accidentally leaving the hand when it is slippery from blood or other moisture.

Hence the literature shows a number of instruments devised for this special operation

An article by Dr. Joseph C. Beck,[1] with illustration of the tonsillectome he devised and uses, covers this operation fully and explicitly, and I can do no better than to endorse his method and refer the reader to the article. His instrument, however, lacks certain salient features that I have endeavored to incorporate in the new instrument herewith illustrated.

'Early in 1911, I experimented by lashing the fenestrated part of a McKenzie guillotine to a tonsil-snare, thus stiffening the wire so that, with the finger, the tonsil could be pushed into the fenestra (after the method long in use by Dr. Victor Ray with the McKenzie guillotine). In this way I succeeded in getting the wire down to the base of the tonsil and easily snaring it encapsuled. This crude instrument was quite satisfactory but it was clumsy and from it was evolved the new one which is fully described under the illustration.

If the tonsil is adherent to the pillars, it should be dissected free, then fed into the fenestra (*A*) and the instrument held

1. Beck, J. C.: Tonsillectomy with a Single Instrument, the Tonsillectome, THE JOURNAL A. M. A., Jan. 27, 1912, p. 240.

firmly down to the base of the tonsil with the *left forefinger* and the wire loop (*C*) drawn as taut as the operator's strength permits and, if this is not sufficient to remove the tonsil, then carriage (*F*) should be locked by means of the lever (*D*) and the operation finished by means of the ratchet-screw (*E*). In many instances, depending on the strength of hand of the operator, the ratchet-screw will not be needed.

The same wire loop can be used to remove the second tonsil by reversing the movement of the ratchet, when the wire will present at the end of the cannula and be easily replaced in the groove of the fenestra.

This method is practically bloodless compared to that with the various cutting instruments.

19 West Seventh Street.

IRRIGATION OF THE SPINAL CANAL AS A PRELIMINARY TO THE INTRODUCTION OF FLEXNER'S ANTIMENINGITIC SERUM

D. I. HIRSCH, M.D., MONROE, LA.

The use of serum in epidemic meningitis has so lessened the mortality of this dread disease that we are now able to classify it along with antidiphtheritic serum, but the mortality is still too high. This may be due in some cases to delayed administration, in others to the severe or fulminating character of the cases, and in still others to the presence of thick or purulent fluid which prevents the serum from permeating to all of the recesses of the tract. My object is not to go into details, but to mention a few points which may be of aid in the treatment of this condition.

According to Flexner, the serum produces its beneficial effects by acting directly on the meningococci, the multiplication of which it inhibits. The damage which is thus inflicted leads to dissolution of the cocci, which are made more susceptible to ingestion by the phagocytes. Thus it is that the cerebrospinal fluid quickly fails to yield cultures of the meningococci though they may still be discovered by direct microscopic inspection. The persistence or progression of the infection arises from the inaccessibility of the diplococci in thick exudate in isolated parts of the membrane or in the blocked-up cerebral ventricles. In view of these facts it would be reasonable to modify Robbs' procedure and irrigate in all cases, not limiting irrigation to those cases in which the fluid is purulent. In a large portion of the cases in which the serum is given early, the results are marvelous. It is in those cases in which the gratifying results are not to be had and in those in which treatment is delayed that one would expect to get the best results from irrigation. As it would be impossible to determine beforehand which cases will improve, and as the procedure is harmless, would it not be wise to irrigate in all cases? The two most valuable results of irrigation are the removal of a large number of cocci and the preparation of the field for the reception of the curative serum, which would more than compensate for the loss of a few leukocytes.

TECHNIC

Remove from 30 to 40 c.c. of fluid by lumbar puncture; then with a small syringe, using gentle pressure, introduce 30 c.c. of normal salt solution 100 F. into the canal; allow this to return; repeat this three times in those cases in which the fluid is cloudy, and, in the purulent cases, repeat until the fluid returns clear. Now, the canal should be clear, all obstacles removed and the serum better able to do its work.

REPORT OF CASES

CASE 1.—The patient, a colored boy, aged 14, had been sick seventy-two hours. The symptoms were delirium and rigid neck. Kernig's sign was positive; this patient complained of headache and pain in limbs. Fluid was withdrawn and 30 c.c. serum administered. The fluid was thick, containing many Gram-negative diplococci. There was no improvement in the next twenty-four hours. The following day another puncture was made, the irrigation being used before the serum was given; in twelve hours patient was conscious and entirely free from pain, the only symptoms that remained being the stiff neck and the Kernig sign. The patient recovered.

CASE 2.—The patient a colored girl, aged 11, was taken with a chill, January 15, at 3 p. m. She had no headache and no pains. A mild purgative was given. January 15 at 6 a. m. the patient was unconscious. I took this to be a fulminating case. Spinal puncture was made; the fluid was examined and found positive. A second puncture was made at 9 a. m.; 20 c.c. of fluid were withdrawn altogether as 15 c.c. had been taken for examination. The canal was irrigated as described above. At 4 p. m. the patient was normal except for a rigid neck. The canal was irrigated daily for three days. Patient recovered.

As this is a harmless procedure, those who are so unfortunate as to have to treat meningitis might find it of some benefit.

Therapeutics

DISTURBANCES OF THE HEART

(Continued from page 719)

TOXIC DISTURBANCES

Under this head it is not proposed to consider disturbances of the heart due to infections, to cardiac disease, or to localized or general acute or chronic disease, but to discuss disturbances due to the absorption of irritants from the intestines, and to alcohol, tobacco and caffein.

It is hardly necessary to repeat that various toxins which may seriously irritate the heart may be absorbed from the intestines during fermentation or putrefactive processes in either the small or the large intestines. The heart may be slowed by some, made rapid by others, and it is often made irregular. The relation of the absorption of intestinal toxins to increased blood-pressure has already been described, and the necessity of removing from the diet anything that perpetuates or increases intestinal indigestion in all cases of high blood-pressure has already been referred to several times. The indications that such a condition of the intestines is present are irregular action of the bowels, a large amount of intestinal gas, sometimes watery stools, often a coated tongue, and the presence of indican in the urine.

Intestinal Putrefaction.—The most successful management of intestinal putrefaction is to remove meat from the diet absolutely. Laxatives in some form are generally indicated, and one of the best is agar-agar. Of course aloin and cascara are always good laxatives, with an occasional dose of calomel or saline, if such seem indicated. Some of the solid peroxid-of-hydrogen-carrying preparations (magnesium peroxid, calcium peroxid, see N. N. R., 1912, p. 174) have been advised as bowel antiseptics, but they are not more successful than many of the salicylic acid preparations, and perhaps none is more efficient than salol (phenyl salicylate) in a dose of 0.3 gm. (5 grains), three or four times a day. Washing out the colon with high injections is often of great value, but should not be continued too long lest the rectum become habituated to distention and bowel movements not take place without an enema.

Lactic acid bacilli, best the Bulgarian, are often of value in intestinal fermentation. A tablet may be eaten with a little milk-sugar or a small lump of cane-sugar after each meal. Or yeast may be taken in the form of brewer's yeast, a tablespoonful in a glass of water, two or three times a day, or one-sixth of an ordinary compressed yeast cake dissolved in a glass of water and

taken once or twice a day. Or various forms of lactic acid fermented milk may be successful.

Any particular food that causes fermentation in the intestine of the subject should be eliminated from his diet; in other words, the patient must be individualized as to fruits, cereals and vegetables but, as above stated, meat should ordinarily be withheld for a time at least.

Alcohol.—The effect of alcohol on the body will evidently have to be considered a very important factor for a long time to come, in spite of the educational influence exerted on the public, and especially on the young, by the publication of facts concerning the dangers of alcohol, and in spite of the increase of total abstinence and no-license cities, counties and states. How true the statistics may be is hard to estimate, but statistics are quoted to indicate that the consumption of alcoholic drinks is at least not decreasing even in the United States.

Enough has already been said of the value and limitations of alcohol as a therapeutic agent. As a beverage, when constantly used, it is likely to cause obesity, gastric indigestion, arteriosclerosis, myocardial degeneration, chronic nephritis and cirrhosis of the liver. Its first action is undoubtedly as a food, if not too large amounts are taken, and therefore it is a protector of other food, especially of fat and starch. A habituè, then, especially if he has reached the age at which he normally adds weight, increases his tendency to obesity, and the first mistake in his nutrition is made. If he takes too much alcohol when he eats or afterward, his digestion will be interfered with. Sooner or later, then, gastritis and stomach indigestion develop, with consequent intestinal indigestion. If he takes strong alcohol, like whisky, on an empty stomach, he may sooner or later cause serious disease of the mucous membrane of the stomach, first chronic gastritis, and later atrophy of the glands of the stomach. Alcohol with meals which contain meat tends to the production of an increased amount of uric acid. Alcohol taken before meals on an empty stomach causes sudden vasodilatation after absorption. It goes quickly to the liver, irritates it, and little by little causes congestions of the liver, so that sooner or later sclerosis of this organ develops.

Alcohol probably causes arteriosclerosis not by its action *per se*, but indirectly by causing gastro-intestinal indigestion and insufficiency of the liver, as a result of which more toxins circulate in the blood, tending to produce arteriosclerosis. Sooner or later these irritants cause kidney irritation, and chronic interstitial nephritis may develop. Just which process becomes the farthest advanced and finally kills the patient is an individual proposition and cannot be foretold. The finale may be cirrhosis of the liver, uremia, arteriosclerosis, apoplexy or myocarditis with dilatation or coronary disease.

While small, more or less undiluted doses of alcohol, as whisky or brandy, may cause quick stimulation of the heart by reflex irritation of the esophagus and stomach, vasodilatation occurs as soon as the alcohol is absorbed, and if large doses are absorbed, vasomotor paresis may occur, temporarily at least.

During acute fever processes with an increased pulse-rate, provided shock or collapse is not present, small or medium-sized doses of alcohol, by dilating the peripheral blood-vessels and increasing the peripheral circulation, may relieve the tension of the heart and slow the pulse by the equalization of the circulation. Some of this action may be due to the narcotic effect of alcohol on the cerebrum. Alcohol may thus in many instances act for good. Overdoses, as shown by cerebral excitation, flushing of the face and increased pulse-rate, will do harm; in fact, many a patient with a serious illness, as typhoid fever or pneumonia, is made delirious by alcohol, and the delirium is not a complication of the disease. Large doses of alcohol in shock or collapse are contra-indicated.

Chronic overuse of alcohol may cause chronic myocarditis and fatty degeneration of the heart, with later weakening of the heart muscle and dilatation.

In acute alcohol poisoning the pulse may become very rapid and weak, and the patient may die of heart failure. This is often seen in delirium tremens. The administration in this condition of enormous doses of digitalis by the stomach is inexcusable, and the reason that such patients survive such digitalis poisoning is that the stomach does not absorb during this cardiac prostration.

A treatment as successful as any in this heart weakness in delirium tremens is morphin sulphate, ¼ grain, and atropin, 1/150 grain, given hypodermatically, with the administration of digitalinum hypodermatically for its later action on the heart. If the heart is contracting very rapidly, an ice-bag over the precordia will often quiet it. If the pulse is very weak, the cerebral sedatives more frequently used in delirium tremens, such as chloral, bromids, paraldehyd, etc., are generally contra-indicated. A hot foot-bath and an ice-cap on the head sometimes aid in establishing a more general equalization of the circulation. It may often be necessary to administer strychnin, although if the patient is greatly excited it should be withheld as long as possible. For the same reason camphor, coffee and other cardiac stimulants which cause cerebral excitation should be withheld.

If the patient is in alcoholic coma, the pulse is generally slow, although it may be of low pressure unless the patient is otherwise diseased. Caffein or coffee is here indicated, and the patient should be kept warm lest he lose necessary heat. The stomach should be emptied by an emetic, often best by apomorphin hypodermatically, unless the pulse is excessively weak. Strychnin may also be given, and digitalin, hypodermatically, if it seems indicated. Camphor is another cardiac and cerebral stimulant that is valuable in these cases.

The treatment of an actual degeneration of the heart from overuse of alcohol is similar to the same condition from other causes.

Caffein.—Caffein can irritate and cause irregularity and tachycardia, especially in certain persons. In fact, some can never take a single cup of coffee without having an attack of palpitation, and many times when coffee and tea have been unsuspected by the patient as the cause of cardiac irritability, their removal from the diet has stopped the symptoms, and the heart has at once acted normally.

Caffein is a stimulant and tonic to the heart, increasing its rapidity and the strength of the contractions. It is also a cerebral stimulant, one of the most active that we possess among the drugs. It increases the blood-pressure, principally by stimulating the vasomotor center and by increasing the heart strength. It acts as a diuretic, not only by increasing the circulatory force and blood-pressure, but also by acting directly on the kidney. This action on the kidney contra-indicates the use of caffein in any form, except in rare instances when there is acute or chronic nephritis. The increased blood-pressure caused by caffein also contra-indicates its use when there is hypertension. Caffein first accelerates the heart and later may slow it and strengthen it; but if the dose is large or too frequently repeated the apex of the

heart ceases to relax properly and there is an interference with the contraction of the ventricles, the heart muscle becomes irritable, and a tachycardia may develop.

Therefore when a heart has serious lesions, whether of the myocardium or of the valves, with compensation only sufficient, the action of caffein in any form is contra-indicated. The fact that it raises the blood-pressure, thus increasing the force against which the heart must act, and that it irritates the heart muscle to more sturdy or irregular contraction, indicates that a patient with a heart lesion or with a nervously irritable heart should never drink tea and coffee or take caffein in any beverage.

Many patients cannot sleep for many hours after they have taken coffee or tea, as the cerebral stimulation of caffein is projected for hours after its ingestion. Caffein does not absorb so quickly and therefore does not act so quickly when taken in the form of tea and coffee as it does when taken as the drug or as a beverage which contains the alkaloid. Persons who are nervously irritable, excited and overstimulated cerebrally, with or without high blood-pressure, should not take this cerebral and nervous excitant. This is true in early childhood and in youth, and continues true as age advances, in most persons. It is a crime to present caffein as a soda fountain beverage to children and young persons when the excitement of the age is such as already to overstimulate all nervous systems and all hearts.

A considerable majority of persons over 40 learn that they cannot drink tea or coffee with their evening meal without finding it difficult to sleep. Such patients, of course, should omit this stimulant. Some patients have already recognized this fact and its cause; others must be told. The majority of adults are probably no worse and may be distinctly benefited by the morning cup of coffee and the noon coffee or tea, provided that the amount taken is not large. It seems to be a fact that the drinking of coffee is on the increase, especially as to frequency. Certainly the five o'clock tea, with women, is on the increase, and we must deal with one more cerebral and nervous excitant in our consideration of what we shall do to slow this rapid age.

Tobacco.—In spite of the fact that a large number of men to-day do not smoke, more and more frequently every clinician has a patient who smokes too much. The accuracy with which he investigates these cases depends somewhat on his personal use of tobacco, and therefore his leniency toward a fellow-user. Perhaps the percentage of young boys who smoke excessively is larger than the percentage of men. Whether the term "excessive" should be applied to any particular amount of tobacco consumed depends entirely on the person. What may be only a large amount for one person may be an excessive amount for another, and even one cigar a day may be too much for a person—as much for him as five or more cigars for another.

The internal revenue report shows that the use of tobacco is on the increase; from July 1 to Oct. 1, 1912, 1,000,000,000 more cigarets were used in the United States than for the same three months of 1911. During the same period of three months, in which a total of 3,800,000,000 cigarets were consumed, 1,950,000,000 cigars were also used. It is therefore seen that in spite of the public school instruction as to the physiologic action of tobacco and its harm, and in spite of the antitobacco leagues, the consumption of tobacco is enormously on the increase.

The most important action of nicotin is on the circulation. Except during the stage when the person is becoming used to the tobacco habit, in which stage the heart is weakened and the vasomotor pressure lowered by his nausea and prostration, the blood-pressure is always raised during the period of smoking. The length of time the increased pressure continues depends on the person, and it is this diminishing pressure that causes many to take another smoke. The heart is slowed by the action of nicotin on the vagi, as these nerves are stimulated both centrally and peripherally. An overdose of nicotin will paralyze the vagi. The heart action then becomes rapid and perhaps irregular. The heart muscle is first stimulated, and if too large a dose is taken, or too much in twenty-four hours, the muscle becomes depressed and perhaps debilitated. The consequence of such action on the heart muscle, sooner or later, is a dilatation of the left ventricle if the overuse of the tobacco is continued.

There is, then, no possible opportunity for any discussion as to the action of tobacco on the circulation. Its action is positive, constantly occurs, and is always to be considered. The only point at issue is as to whether such an activity is of consequence to the individual. The active principle of tobacco is nicotin, besides which it contains an aromatic camphor-like substance, cellulose, resins, sugars, etc. Other products developed during combustion are carbon monoxid gas, a minute amount of prussic acid and in some varieties a considerable amount of furfural, a poison. From any one cigar or cigaret but little nicotin is absorbed, else the user would be poisoned. It is generally considered that the best tobacco comes from Cuba, and in the United States from Virginia. While it has not been definitely shown that any stronger narcotic drug occurs in cigarets sold in this country, it still is of great interest to note that a user who becomes habituated to one particular brand will generally have no other, and the excessive cigaret-smoker will generally select the strongest brand of cigarets. The same is almost equally true of cigar smokers.

Besides the effect on the circulation, no one who uses tobacco can deny that it has a soothing, narcotic effect. If it did not have this quieting effect on the nervous system, the increased blood-pressure would stimulate the cerebrum. Following a large meal, especially if alcohol has been taken, the blood-vessels of the abdomen are more or less dilated by the digestion which is in process. During this period of lassitude it is possible that tobacco, through its contracting power, by raising the blood-pressure in the cerebrum to the height at which the patient is accustomed, will stimulate him and cause him to be more able to do active mental work. On the other hand, if a person is nervously tired, irritable, or even muscularly weary, a cigar or several cigarets will increase his blood-pressure, take away his circulatory tire, soothe his irritability, and stop temporarily his muscular pains or aches and muscle weariness. If the user of the tobacco has thorough control of his habit, is not working excessively, physically or mentally, has his normal sleep at night and therefore does not become weary from insomnia, he may use tobacco with sense and in the amount and frequency that is more or less harmless as far as he is concerned. If such a man, however, is sleepless, overworked or worried, if he has irregular meals or goes without his food, and has a series of "dinners," or uses a lot of alcohol, which gives him vasomotor relaxation, he finds a constantly growing need for a frequent smoke, and soon begins to use tobacco excessively. Or the young boy, stimulated by his associates, smokes cigarets more and more frequently until he uses them to excess.

Just what creates the intense desire for tobacco to the habitué has not been quite decided, but probably it is a combination of the irritation in the throat, especially in inhalers, of the desire for the rhythmic puffing which is a general cerebral and circulatory stimulant, for the increased vasomotor tension which many a patient feels the need of, for the narcotic, sedative, quieting effect on his brain or nerves, for the alluring comfort of watching the smoke curl into the air, or for the quiet, contented sociability of smoking with associates. Probably all of these factors enter into the desire to continue the tobacco habit in those who smoke, so to speak, normally.

The abnormal smokers, or those who use tobacco excessively, have a more and more intense nervous desire or physical need of the narcotic or the circulatory stimulant effect of the tobacco, and they smoke more and more constantly. They are largely inhalers, and frequently cigaret fiends.

It is probable that tobacco smoked slowly and deliberately, when the patient is at rest, and when he is leading a lazy, inactive, non-hustling life such as occurs in the warmer climates, is much less harmful than in our colder climates where life is more active. Something at least seems to demonstrate that cigaret-smoking is more harmful in our climate than in the tropics.

It has been shown by athletic records and by physicians' examinations of boys and young men in gymnasiums that perfect circulation, perfect respiration and perfect normal growth of the chest is not compatible with the use of tobacco during the growing period. It is also known that tobacco, except possibly in minute quantities, prevents the full athletic power, circulatorily and muscularly, of men who compete in any branch of athletics that requires prolonged effort.

The chronic inflammation of the pharynx and subacute or chronic irritation of the lingual tonsil, causing the tickling, irritating, dry cough of inhalers of tobacco is too well known to need description.

Many patients who oversmoke lose their appetites, have disturbances from inhibition of the gastric digestion, and may have an irregular action of the bowels from overstimulation of the intestines, since nicotin increases peristalsis. Such patients look sallow, grow thin and lose weight. These are the kind of patients who smoke while they are dressing in the morning, on the way to their meals, to and from their business, and not only before going to bed, but also after they are in bed. It might be a question as to whether such patients do not need conservators. The use of tobacco in that way is absolutely inexcusable, if the patient is not mentally warped. Cancer of the mouth caused by smoking, blindness from the overuse of tobacco, muscular trembling, tremors, muscle cramps and profuse perspiration of the hands and feet are all recognized as being caused by tobacco poisoning, but such symptoms need not be further described here.

The reason for which physicians most frequently must stop their patients from using tobacco, however, is that the heart itself has become affected by the nicotin action. The heart muscle is never strengthened by nicotin, but is always weakened by excessive indulgence in nicotin, the nerves of the heart being probably disturbed, if not actually injured.[1] The positive symptoms of the overuse of tobacco on the heart are attacks of palpitation on exertion lasting perhaps but a short time, sharp stinging pains in the region of the heart, less firmness of the apex-beat, perhaps irregularity of the heart, and cold hands and feet. Clammy perspiration frequently occurs, more especially on the hands. Before the heart muscle actually weakens, the blood-pressure has been increased more or less constantly, perhaps permanently, until such time as the left ventricle fails. The left ventricle from tobacco alone, without any other assignable cause, may become dilated and the mitral valve become insufficient. Before the heart has been injured to this extent the patient learns that he cannot lie on his left side at night without discomfort, that exertion causes palpitation, and that he frequently has an irregularly acting heart and an irregular pulse. He may have cramps in his legs, leg-aches and cold hands and feet from an imperfect systemic circulation. In this condition if tobacco is entirely stopped, and the patient put on digitalis and given the usual careful advice as to eating, drinking, exertion, exercise and rest, such a heart will generally improve, acquire its normal tone, and the mitral valve become again sufficient, and to all intents and purposes the patient becomes well.

On the other hand, a heart under the overuse of tobacco may show no signs of disability, but its reserve energy is impaired and when a serious illness occurs, when an operation with the necessary anesthesia must be endured or when any other sudden strain is put on this heart, it goes to pieces and fails more readily than a heart that has not been so damaged.

If a patient does not show such cardiac weakness but has high tension, the danger of hypertension is increased by his use of tobacco, and certainly in hypertension tobacco should be prohibited. The nicotin is doing two things for him that are serious; first, it is raising his blood-pressure, and second, it will sooner or later weaken his heart, which may be weakened by the high blood-pressure alone. Nevertheless a patient who is a habitual user of tobacco and has circulatory failure noted more especially about or during convalescence from a serious illness, particularly pneumonia, may best be improved by being allowed to smoke at regular intervals and in the amount that seems sufficient. Such patients sometimes rapidly improve when their previous circulatory weakness has been a subject of serious worry. Even such patients who were actually collapsed have been saved by the use of tobacco.

Whether the tobacco in a given patient shall be withdrawn absolutely, or only modified in amount, depends entirely on the individual case. As above stated, no rule can be laid down as to what is enough and what is too much. Theoretically, two or three cigars a day is moderate, and anything more than five cigars a day is excessive; even one cigar a day may be too much.

(To be continued)

1. Those who wish to read further of the general physiologic effects of tobacco are referred to our article in this department, May 8, 1909, p. 1495, and to an editorial on "Some New Evidence on the Tobacco Question," THE JOURNAL, Nov. 16, 1912, p. 1798.

Relative Cost of Health and War.—To kill a soldier in war, according to statistics based on the late unpleasantness between the British and the Boers in South Africa, cost forty thousand dollars. To save the life of a citizen in the Panama Canal Zone costs $2.43 per capita of population, reports Colonel Gorgas, head of the sanitary force of the Zone. From which it would seem that it is much more economical to save a citizen than it is to kill a soldier. But we are so blind that while we willingly tax ourselves hundreds of millions of dollars to carry on a war, we grudgingly give up a paltry sum for the support of health boards—so little, indeed, that the health boards are unable to do much more than give advice, which advice is usually not acted on to any noticeable extent.—*Druggists Circular.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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THE BLOOD IN ANAPHYLACTIC SHOCK

Under the influence of scientific investigation the unique biologic phenomenon which has been designated as anaphylaxis is slowly beginning to unfold its character and disclose the underlying chemical reactions which are responsible for its remarkable manifestations. It has previously been noted that the injection of foreign protein into the circulation is followed by a noteworthy response in the nature of the appearance of enzymes of the proteolytic type capable of digesting the new substance introduced into the blood. One is at once inclined to ask the significance of the newly developed plasma enzyme. Is it provided by the organism to disintegrate the foreign protein and thus give an opportunity for its physiologic removal from the blood-stream? And, if so, are the proteolytic digestion products responsible for the phenomena of the so-called anaphylactic shock? It is well known that the protein derivatives of the proteose or peptone type are capable of inciting in animals responses which have much in common with the anaphylactic collapse seen in certain species.

The existence of a latent period between the injection of the sensitizing dose of protein and the actual exhibition of the condition of hypersensitiveness has complicated the experimental analysis of the situation and rendered a hypothesis much more difficult to formulate. The acquired proteolytic power of the serum may be manifested very soon after the first injection, so that it becomes evident that the presence of the enzyme and of the foreign protein in the circulation does not of itself suffice to occasion the anaphylactic shock.

It has been observed, furthermore, that during the stage of so-called anti-anaphylaxis the capacity of the serum to digest the sensitizing protein is largely or entirely lost. Abderhalden[1] has lately examined the blood of sensitized guinea-pigs which were reinjected after an interval of eighteen days. He observed that in blood removed within half an hour after the reinjection the presence of diffusible (peptone-like) compounds giving the biuret reaction could be shown in the serum obtained. The possibility of the formation of peptone in the circulation during the stage of anaphylactic shock was thus demonstrated. The practical importance of this finding in a clinical way becomes apparent. The possibility of detecting proteolytic enzymes in the blood-serum enables one to foretell the danger of an anaphylactic collapse if a second injection of a previously used antigen is attempted. Inasmuch as the method — incubation of the serum and dialysis, followed by examination of the diffusate for protein by the biuret or some other delicate test — is quite within the possibilities of clinical use, it may turn out to be feasible hereafter, by the simple expedient of a diagnostic laboratory test, to avoid the hidden dangers of anaphylactic response which lurk unsuspected in the blood.

1. Abderhalden, E.: Weitere Studien über Anaphylaxie, Ztschr. f. physiol. Chem., 1912, lxxxii, 109

HEALTH OF THE AMERICAN INDIAN

In spite of the fact that the Office of Indian Affairs has recently made its eighty-first annual report to the Secretary of the Interior,[1] it is only in the last few years that the United States government has fully recognized its obligations to the redskin. The present policies are admirable even though of recent development. They center about the individual Indian and Indian family. It is their endeavor to educate each Indian in a knowledge of health and sanitation which will prolong his race and fit him in reality to associate and compete with white Americans. They seek either to place each Indian on a piece of land of his own, on which he can support his family, or to give him an equivalent opportunity in some industry or trade.

The last decade has seen a notable increase in the total school attendance of Indian children in government, public and mission schools, from 24,120 in 1902 to 39,397 in 1911; and yet in 1911 there were 24,000 Indian children of school age who were not in any school. In the past year special attention has been paid to the health and physical development of Indian pupils, and the Indian Office has sought particularly to deal effectively with the need for social and recreational development among the Indians. Along this line was the work of a committee appointed by the Russell Sage Foundation and the National Recreation and Playground Association to cooperate with the government bureau in a study of the communal life of the Indians, especially as to their recreations and social activities. In the Indian school dormitories out-door sleeping-porches are being made a feature; 500 cubic feet of air-space per child is the minimum allowed in the dormitories.

As in all primitive races, alcohol is one of the Indian's deadliest foes, and to keep it from him requires unceasing vigilance. During the year 1912, 1,480 cases of illegal supplying of liquor to Indians were prosecuted, in addition to 846 pending from the previous year. In these there were 1,002 convictions, 267 dismissals and 32 acquittals. From the point of view of the public health

1. Ann. Rep. 1913, Indian Office, Dept. of the Interior.

of the Indian, the introduction of alcoholic liquors among them is a most serious question, and the efficient enforcement of the national laws forbidding it is to be commended. It is of interest to note that during 1912 a conviction was secured for this offense in Washington, D. C., showing that the Indian's thirst for alcohol follows him far from home, that he can obtain it in the very shadow of the capitol, and that the law is applicable everywhere.

In 1912 the Indian Office had under its supervision 300,930 Indians;[2] in recent years the Indian population has been steadily increasing. The accompanying tables, supplied by the Commissioner of Indian Affairs, indicate a steadily progressing increase in the Indian population, and show the changes in the numerical strength of tribes in which there was a marked increase or decrease. In general, health conditions in schools and on reservations are far from satisfactory, even though definite progress is being made. The death-rate in the Indian country is 35 per thousand, as compared with 15 per thousand for the country as a whole. No exact figures are as yet available for the infant mortality, but it is very high.

Tuberculosis was probably the most destructive disease. Of 42,645 Indians examined for disease last year, 6,870, or 16.11 per cent., were tuberculous. On the White Earth Reservation in Minnesota 600 out of 3,300 Indians had tuberculosis. On the Blackfeet Reservation in Montana, one-third of those examined had the disease. Of the total population of the Colorado River Reservation in Arizona, 20 per cent. had tuberculosis. At the Mescalero Reservation School in New Mexico, where the climate is nearly ideal, 5 per cent. of the children were tuberculous. Over one-fourth of the Indians of the Pine Ridge Reservation in South Dakota had tuberculosis. Even in southern California over 10 per cent. of the Indians suffer from the disease. Yet in all the United States there is no tuberculosis sanatorium for adult Indians, and there is provision for only 175 children of school age with incipient tuberculosis.

During the year a prize composition contest was held for special study and papers on tuberculosis. About 20,000 Indian children competed, and 561 prizes were awarded. Wide-spread interest in health and hygiene was aroused by this means. The three tuberculosis sanatorium schools were improved and enlarged. The one at Fort Lapwai, Idaho, can now accommodate 100 children. The Phoenix sanatorium in New Mexico is now of distinct value in caring for incipient cases in the Southwest. The sanatorium at Laguna, New Mexico, meets the need of those cases requiring an institution at a high altitude.

Of the 42,645 Indians examined, over 16 per cent. were likewise suffering from trachoma, and on the Kiowa, Comanche and Apache reservations 71 per cent. of the schoolchildren had trachoma. The Indian Service is developing a corps of ophthalmologists to cope with these conditions. Under their direct supervision last year over 3,000 patients were operated on and over 8,000 were treated by the regular school and agency physicians.

The campaign of education in health and hygienic living has been continued by means of stereopticon lectures, pamphlets, school training, and through the medium of visiting nurses, field matrons and women industrial teachers. It is hoped soon to make provision for dental services by means of traveling dentists or by contract with local dentists when practicable.

For the fiscal year 1913 an appropriation of $250,000 has been asked from Congress to defray the expenses of a special health campaign, but only a part of this has so far been granted. Full provision for this work cannot be too earnestly urged. The Indian medical service is sadly underpaid and overworked, and is totally unable in its present status to cope with existing conditions successfully. The inferior pay and small chance for promotion[3] do not attract the best class of candidates. Congress should see to it that these things are speedily remedied.

TABLE 1.—STATISTICS OF INDIAN POPULATION

Fiscal Year	Indian Population	Indians Under Supervision Indian Office, Including Five Civilized Tribes	Indians Within Reach of Contract or Regular Physicians	Indians Receiving Medical Relief from Indian Office
1903	263,233	241,252	*	*
1904	274,206	246,855	*	*
1905	284,079	256,415	*	*
1906	291,581	264,596	*	*
1907	298,472	264,227	*	*
1908	300,412	269,192	*	40,000†
1909	300,545	*	172,707	45,000†
1910	304,950	272,664	175,218	50,000†
1911	322,715	296,320	176,796	55,000†
1912	327,425	300,930	176,476	60,000†

* No record. † Estimated.

TABLE 2.—CHANGES IN THE STRENGTH OF TRIBES

Name of Tribe and State	Population 1902	Population 1912	Increase (+) or Decrease (—)
Eastern Cherokee, North Carolina..	1,431	2,078	+ 647
Navajo, Arizona and New Mexico..	21,837	30,244	+8,407
Piegan, Blackfeet, Montana.....	2,082	2,613	+ 531
Pueblo, Arizona and New Mexico...	8,334	9,349	+1,015
Sioux, South Dakota.....	17,103	20,333	+3,230
Yakima, Washington	2,313	3,046	+ 733
Confederated, Flathead, Montana...	2,581	2,281	— 300
Crows, Montana	1,870	1,731	— 139
Jicarilla Apache, New Mexico....	802	680	— 122
Uinta, Uncompahgre and White River Ute, Utah.....	1,661	1,183	— 478
Winnebago, Wisconsin	1,377	1,243	— 134

THE NUTRITION INVESTIGATION OF THE ILLINOIS PELLAGRA COMMISSION

The report of the biochemical work under the auspices of the Illinois Pellagra Commission[1] includes a series of dietary studies by A. F. Wussow and H. S. Grindley of the University of Illinois. These were conducted

2. In the editorial Health Work Among Indians, THE JOURNAL A. M. A., May 18, 1912, p. 1515, the number was given as 310,926. This was taken from the latest available encyclopedic reference.

3. Compare Physicians in the Indian Service, Current Comment, THE JOURNAL A. M. A., Feb. 8, 1913, p. 454.

1. A condensed report of the Illinois Pellagra Commission is given in the Archives of Internal Medicine, August and September, 1912, pp. 123, 219.

at the Peoria State Hospital where the ravages of pellagra have been particularly noticeable. It has been impossible hitherto to extend these nutrition investigations very far; nor have they, as yet, thrown any light on the etiology of the baffling disease. Incidentally, however, the presumable nutritive value of certain typical dietaries furnished to inmates of a large state charitable institution can be estimated from the statistics which have been compiled. Perhaps when similar data have been collected from other comparable institutions in which pellagra has not appeared, something regarding its possible relation to diet will come to light.

Whatever the result may be, these new studies have an independent value in connection with the debated problem of the dietary standards which prevail or which should be adopted for public institutions such as hospitals for the insane. It may be replied that there is no dearth of statistics to serve as guides in this matter. If this be admitted in a general way, it must at once be added that the facts and figures available are in many cases of limited value. Practically all of the earlier results were determined from statistics of the food-supplies and average populations taken from the books of the institution, and not ascertained by actual experiment. Atwater showed in one instance that the discrepancies between such crude estimates and the more accurate determinations of actual food consumption may amount to 33 per cent.

Although there is a fairly general agreement among students of nutrition regarding the total energy requirement of healthy men under various conditions of activity, one finds less unanimity when the protein needs are taken into consideration. Without attempting at this time to defend or define either a "high" or a "low" protein plane as the optimum of nutritive success, we shall content ourselves with the facts ascertained at Peoria. The nutritive values of the food consumed in the "general" diet at the Illinois institution averaged 73 gm. of protein and 2,568 calories per man per day. These figures are for the entire hospital population, including employees. They are distinctly lower than the "standards" usually assigned, and somewhat lower than the figures reported in earlier dietary studies in similar American institutions.[2] The most unusual feature of the Peoria study is the fact that the diet was chiefly vegetable in nature. Whereas in the average American dietary animal foods constitute nearly 40 per cent. and vegetable products about 60 per cent. of the ingredients, in the Peoria institution only 8 per cent. consisted of foods of animal origin.

It is well known that comparatively inactive persons, such as constitute the usual groups of the insane, require less food than hard-working persons. Yet when one takes into consideration the moderate total intake in the daily dietary of the hospital cited, as well as the reputed lower digestibility of a diet containing a large proportion of vegetable foods, it may be questioned whether the total amount of the nutrients furnished should not be increased or at least their character altered. This is the general conclusion tentatively reached by the Illinois report. Allowing a safe margin and taking into consideration the needs of the ordinary patients rather than those of the more active employees or extreme invalids, the following provisional standard is proposed: per man per day: protein, 90 gm.; energy, 2,700 calories; per woman per day: protein, 72 gm.; energy, 2,200 calories. To these must be added a fair allowance for waste and shrinkage which should not exceed from 12 to 15 per cent.

Other more specific recommendations are also made. It is suggested that in consideration of the character of the people for whom the standard is designed, at least 40 or 50 per cent. of the protein of the diet should be derived from animal foods. By this is not meant meats exclusively. Eggs, milk and other dairy products may be included. The diet should at all times possess a variety; especially should it contain an abundance of fresh fruits and vegetables, in season, to insure an abundance of desirable food "accessories" and mineral nutrients. The Illinois report suggests that since practically each state institution has its own large gardens and farms, it ought not to be a difficult matter to furnish the provisions just cited. Further recommendations regarding the preparation and serving of food and other hygienic features are self-evident.

Additional data have been secured in regard to special corn diets and corn-free diets used in the Peoria Hospital. They give no immediate clue to the solution of the pellagra problem, and these dietaries as furnished certainly cannot be considered as excessive, although probably adequate for the patients' needs. Judged by the moisture content, acidity, the presence of molds and other microorganisms, and the presence of insects, the corn-meal used in the Illinois state institutions appears, on the average, to be of good grade. It was found to be of better quality than the corn-meal obtained from a number of other sources, including Alabama and Italy. Quite aside from any contribution to the pellagra question, the broader problems of diet in public institutions are well worthy of continued investigation by methods which are accurate and persons who are competent.

2. Compare Atwater, W. O.: Dietaries for Hospitals for the Insane, Final Report, Thirteenth Annual Report, State Commission in Lunacy, New York, 1900-1901; Dietary Studies in the Connecticut Hospital for the Insane, Annual Report, Conn. Agric. Exper. Sta., Storrs, 1899. Pratt, H. A., and Milner, R. D.: Dietary Studies at the Government Hospital for the Insane, Bull. 150, Office Exper. Sta., U. S. Dept. Agric., 1904. Knight, Pratt and Langworthy: Dietary Studies in Public Institutions in Baltimore, Bull. 223, Office Exper. Sta., U. S. Dept. Agric., 1910.

IS "BOB VEAL" TOXIC?

Laws which are in force in various countries, notably in the United States, forbid the sale of veal under one month of age for use as human food. There is a widespread belief that "bob veal," as the flesh of these very young calves is popularly called, has properties detrimental to health so that its consumption is liable to be

followed by untoward symptoms. Diarrhea is occasionally ascribed to the ingestion of young veal. An inspection of representative books on hygiene fails to disclose any evidence for the justification of this popular notion regarding bob veal. It is well known that the flesh of younger animals is richer in water and more tender than that of older ones of the same species. The proportion of the nutrient substances increases with age. Older animals likewise yield more of the extractive bodies; so that soup prepared from veal is by no means comparable with that yielded by the meat of fattened cattle. Veal is commonly regarded as more difficult of digestion than beef, the reason being assigned to differences in the texture of the flesh.

Prof. P. A. Fish of Cornell University has reported a series of experiments in which bob veal was compared with market veal and with beef in respect to some of its properties.[1] Although the experiments indicate quite a satisfactory line of demarcation between the younger bob and older veal, there are occasional individual exceptions, and the method of distinguishing between old and young veal as yet cannot, therefore, be declared infallible. Dietetic experiments were also carried on in which bob veal was eaten in seven families aggregating twenty individuals ranging from 2 to 60 years of age. The statement that the flesh of bob veal has a laxative effect and induces diarrhea was not confirmed in a single instance throughout the work. The health in all cases was apparently normal; nor did any family refuse a second helping when another carcass became available.

In all veal there is a deficiency of fat as compared with beef. In bob veal this deficiency is naturally somewhat more pronounced, because fat is a result of growth and age under proper nutritive conditions. In the use of bob veal this deficiency may be overcome to a considerable extent by cooking the veal with pork or other fat.

Professor Fish is of the opinion that bob veal is in no way injurious when used as human food. The desirability of changing the present regulations and existing legal restrictions regarding the sale of very young veal is thus thrown open for discussion. The subject is one which should not be dismissed or settled by a few haphazard experiments or hasty generalizations.

1. Fish, P. A.: Bob Veal and the Public, Am. Vet. Rev., 1912, xli, 178.

GOVERNOR SULZER'S SPECIAL MESSAGE ON PUBLIC HEALTH

One of the most significant occurrences of the winter in the public health campaign is the report of the special commission appointed by Governor Sulzer on public health in the state of New York, and the transmission of the report to the state legislature by the governor, accompanied by a special message, pointing out the importance of this subject. This is probably the first time a state executive has taken such an advanced position regarding the duty of the state to protect the lives and health of its citizens. The governor's message opens with the statement that the protection of the life and the promotion of the health of its citizens are among the first duties of the state, and that there is no more important subject in public administration than public health. After reviewing the circumstances which led to the appointment of the special commission, the work which it has done and the character of the report which it has made, the message then criticizes the present public health administration in the state of New York. In order to permit of a comparison between the conditions which Governor Sulzer describes and those found in other states, it must be borne in mind that New York has probably one of the most effective health departments in the country, and that if such conditions are found in the Empire State, the situation in most of the other states is probably worse.

Governor Sulzer points out that there is no well-coordinated system of public health administration in the state, and that the local boards of health, consisting of the county supervisor, justice of the peace and other local authorities, can hardly be regarded as qualified agencies for stamping out disease. He also asserts that there is no reason why, under proper management, the death-rate in the country should not be much lower than that in the city. He further shows that the fees paid to members of town and village boards of health amount to from $70,000 to $100,000 per year, for which expenditure no results are obtained. He is particularly emphatic in showing the economic value of modern public health administration. "An outbreak of small-pox in any city or village involves serious losses to its business men, most of which are clearly avoidable. It may be conservatively stated that the saving that would result from the efficient control of preventable diseases other than tuberculosis throughout the state would be not less than $10,000,000 per year. Efficient public health administration pays. The motto of the New York City Health Department, 'Public health is purchasable within natural limitations, and any community can determine its own death-rate,' should be made the motto of the state."

After reviewing the results of the campaign against tuberculosis, and asserting that "the people have determined that tuberculosis must be conquered," the governor adds: "Another thing: The loss of 7,000 babies in this state per annum must be stopped. The remedy is simple—state-wide registration of births, and in industrial centers a sufficient number of infant-welfare stations." Every reader will doubtless agree with him that 1,128 deaths per annum from typhoid fever is at least 1,000 too many, and that by controlling infectious diseases, and by creating increased interest in public health, the average of physical vigor, efficiency and productiveness can be greatly increased.

Regarding the report of the commission itself, nineteen special recommendations are made for immediate consideration. The more important of these are:

That the term of office and compensation of the state health commissioner be made such as to secure and retain the most efficient man available for that purpose.

That a public health council be established with power to adopt sanitary regulations.

That the state commissioner of health exercise supervision over local health authorities.

That the state outside of New York City be divided into at least twenty sanitary districts with an expert sanitary supervisor in each, devoting his full time to health work.

That the health officers in towns and villages receive an annual minimum salary equivalent to at least fifteen cents per inhabitant.

That the model law on vital statistics, with such changes as may be necessary, be substituted for the present law.

That each city and county be authorized to employ trained nurses for the care of the sick.

That a bureau of child hygiene and a bureau of public health nursing be added to the State Department of Health.

Other recommendations are: state provision for incipient cases of tuberculosis, county hospitals for tuberculosis, adequate laboratory facilities, local contagious disease hospitals and extension of the educational work of the State Department of Health.

In addition to the subjects covered in its positive recommendations, the commission also states that there are a number of questions of great importance which should be taken up at the earliest possible moment, but on which it is not yet ready to report. These subjects include the establishment in medical colleges of systematic courses of instruction in sanitary science, the requiring of a health certificate as a condition for a marriage-license, the establishment of industrial plants in connection with tuberculosis hospitals, a general study of the results of sanatorium treatment of tuberculosis, the regulation of housing in cities of the second and third classes, and the better protection of water-supplies.

RAILWAY SANITATION

The advance of the railways of the country in applied sanitation has been marked. When one recalls the conditions allowed to exist in railway cars twenty years ago the present state of cleanliness is comparatively satisfactory. The railways are indeed to be commended for their gradual introduction of hygienic regulations that keep their cars, in spite of the numbers of people who travel in them every day, in a state that is not likely to endanger health. There remains, however, one phase of railway sanitation that will soon have to be dealt with; though it is a difficult phase, there is no doubt that improvement of present conditions must come without delay. It would seem to be better for the railways to take up the problem of their own initiative rather than be forced into it by legal regulation.

We are referring to the present mode of disposing of the sewage of trains. In former years when population was less dense and when trains were not nearly so frequent and crowded, it was perhaps not so much to be deprecated that the railways should scatter sewage over the right of way. Now that railways cross thickly populated tracts of territory, and express-trains pass through towns of considerable size without stopping, the crude disregard of hygiene in this matter is entirely out of keeping with present-day sanitary science, particularly as the railway rule is to have the toilets locked only during the times of stopping at stations, which gives opportunity for the scattering of offensive material, distinctly dangerous to health, even on the streets of towns.

There is danger in the present arrangement in the fact that railways frequently cross streams that are connected with water-supplies, and the present custom of disposing of the contents of railway water-closets may well prove a source of contamination of drinking-water. It will not be long before the general public wakes up to this serious danger. Now that we are carefully disposing of sewage in connection with our cities and are no longer allowing ordinary waterways to be contaminated as they formerly were, protection of our smaller streams will surely come to be felt as a necessity.

At present the Pullman Company makes arrangements for the disposal of sewage when cars stand on sidings in smaller towns waiting to be picked up by through express-trains during the night. There is no reason why there should not be an extension of this system that will protect the public, especially its water-supplies. Already boards of health in certain states have issued orders that water-closets shall be closed in certain portions of the state in which there is obvious danger of the contamination of the water-supply. This is of course only a makeshift, and most of us would have little confidence in the absolute safety afforded by any such arrangement. Undoubtedly the proper disposal of sewage would be somewhat expensive and would require special appliances. One device for this purpose is already on the market, and doubtless American inventive genius can be depended on to work out others.

PNEUMONIA PREVENTION

The end of the winter, far from bringing a termination to the danger from pneumonia, in reality marks the beginning of the season when this disease becomes an extremely serious cause of increase of mortality. This is true particularly in large cities. In recent years this increase has become more and more marked and is all the more striking because of the decrease in deaths from other infectious diseases. Pneumonia has been aptly termed the "Captain of the Men of Death," displacing tuberculosis which for so long occupied that "bad eminence."

It is not too much to say that the most important problem before the medical profession at present is the reduction of the death-rate from pneumonia. Considering the nature of the disease and the intense strain which it imposes on the heart, it is probable that the only hopeful outlook for any considerable reduction in pneumonia mortality is through the prevention of the disease. The prospect of a cure for it, in the popular sense of that term, has grown less as we have learned more about the disease. Especially in the case of those in whom the disease is complicated by any affection of the heart, kidneys or lungs the prognosis is always most unfavorable. Once the disease has begun, we have to deal with an ever-increasing mechanical difficulty which only a vigorous constitution can hope to overcome.

While the incidence of pneumonia is greatest during the colder portion of the year it is not dependent entirely on low temperature. The disease occurs at all seasons and in all climates. It does not work its greatest ravages in the colder climates, but is rather rare in the cold of high altitudes and is almost never known to occur within the Arctic circle. In spite of all their suffering from cold, Arctic explorers escape this danger. Hence we must assume that cold acts in conjunction with some other factor in the production of the disease. Pneumonia is favored by lack of sunlight and it occurs among those who are much exposed to dust or who have to breathe the emanations from the lungs of other people. Catarrhal processes affecting the air passages prepare the soil for the implantation of the germ of pneumonia. It is particularly a disease of city life and crowded living.

The ubiquity of the bacterial cause of pneumonia, which often exists in the bronchi for a variable time without causing the disease, indicates that it alone is incapable of producing pneumonia. The so-called predisposing causes, therefore, assume a peculiar importance because they are measurably under our control, while for the present the pneumococcus is beyond our reach.

With our present knowledge the prospects are hopeful for the control of pneumonia in the future. Our housing problems in the large cities are being slowly but surely solved, and doubtless before long most of the poor will be housed nearly as well as the laborers at Panama. At least health regulations will prevent that crowding of sleeping- and living-apartments which makes rebreathing of air inevitable. The improvement of means of rapid transit in the large cities will enable an increasing number of persons to live in the suburbs; besides there is a definite movement on the part of manufacturers to establish themselves in suburban territory and draw their employees around them, rather than to settle in a crowded neighborhood as heretofore, because in such a neighborhood labor is abundant and cheap.

There is special significance for the individual in these observations on the prevention of pneumonia. Its avoidance is largely a question of personal prophylaxis and of certain precautions that prevent the development of the disease by lessening the predisposition to it. Men in middle life, particularly those above 50, must learn during unsettled weather to avoid crowds, especially when fatigued and when they have been for a number of hours without eating. Late at night, when for any reason a meal has been missed, crowds are dangerous. If this lesson could be generally learned there would be less pneumonia among the well-to-do classes. The principal danger comes in crowded street-cars, which if possible should be avoided at rush hours. It needs to be emphasized that the danger from overcrowding is greatly enhanced by fatigue and going without food. In a word, the prophylaxis of pneumonia is now much clearer than it was. Like all the other infectious diseases, instead of being a more or less inevitable dispensation it has come to be recognized as due to certain definite factors which can be greatly lessened by public and individual hygienic regulations.

Current Comment

DRUG JOURNALS—HIGH CLASS AND OTHERWISE

The "patent-medicine" curse stands in the same relation to pharmacy as the "ethical proprietary" evil to medicine. The "proprietary" encourages unscientific prescribing and careless diagnoses on the part of the physician; the "patent medicine" leads many druggists to assume the functions of the physician and to prescribe for diseases of which they are ignorant. Fortunately there are signs of better things in both professions. As the more enlightened physicians, with the aid of the better medical journals, are striving to remove the blight of the proprietary evil, so the better class of pharmacists with the cooperation of a few high-grade drug journals, are doing their best to abolish the "patent-medicine" curse. Among the pharmaceutical publications that are doing good service to the profession they represent, the *Druggists Circular* of New York occupies a preeminent position. This journal stands for all that is best in pharmacy, exposing the weak spots in the profession and unmasking pharmaceutical frauds without fear or favor. No better illustration of its attitude can be given than the following excerpt from an editorial in the current issue discussing "counter-prescribing" by druggists. The *Druggists Circular* says that "for a man who is not a duly licensed physician to hold himself out as being able to give professional advice about bodily ailments, especially such insidious diseases as diabetes, and by so doing to hinder the sufferer from taking a course which might lead to his cure or improvement, comes perilously near to being murder." The editorial continues: "The time has passed, if it ever existed, when the druggist who undertakes to prescribe for diabetes can shield himself behind the 'poor innocent' cry. Druggists worthy of the name now understand very well that to take a remedy put up at wholesale by a manufacturer who has never even so much as seen the patient supposed to be suffer-

ing with diabetes is not the best thing for the patient to do. If there are any druggists who do not know this, the sooner they learn it the better it will be for humanity." These sentiments, we believe, are those held by all right-thinking druggists. Unfortunately, there are drug journals that cater to the men to whom pharmacy is a trade instead of a profession. Just as in the medical world there are publications whose ethics rise no higher than the counting-house so in pharmacy there are drug journals that appeal essentially to the mercenary element in the profession. The *Meyer Brothers' Druggist*, a house organ published in Missouri, is typical of the latter. In the advertising pages of the February issue of this journal appears an advertisement of a cruel and worthless fraud, Fulton's Diabetic Compound. The advertisement which, of course, was addressed to druggists, ran as follows:

Patient. "What have you that is good for kidney trouble?"
Druggist. "Everything; all the standard preparations. But there is only one that gets such results that patients are requested to advise with them if not recovering. The rest sidestep such letters."

Mr. Druggist, if you will change places with your customer and put yourself in front of the counter and imagine yourself having kidney trouble, can't you see that the above question and answer would settle the matter? In fact, isn't it the very information that you would be hungry for?

The simple statement given above, as small as it is, is selling a gross a year for druggists even in villages.

This miserable suggestion for "counter-prescribing" may be followed by a certain type of druggists. To such as would do so, we commend the sentiments expressed by the editor of the *Druggists Circular*. He holds that the proper place for medicine-fakers — if they have any place outside of close confinement — is on a soap-box at the county fair, for he insists that there is no room for them within the honorable profession of pharmacy.

THE RIGHT WAY AND THE WRONG WAY

In the Medical Economics Department of this issue is a summary of a few of the bills introduced in the various state legislatures on public health topics. In California alone, over one hundred bills have been introduced. In Colorado between fifty and seventy-five measures of different kinds bearing on public health have been reported so far. Most of these bills are drawn by persons with but slight knowledge of the sociologic problems involved, without any experience in sanitary matters, and often with little knowledge of existing conditions in the state. The results of legislation produced under such conditions can be only what they have been for the last fifty years, namely, confusion and inefficiency. As shown in one of the preceding editorials, Governor Sulzer and his special commission have adopted a better plan. The people of New York will reap the advantages. It is earnestly to be hoped that governors of other states will profit by this example, and will endeavor to elevate health conditions by a careful and intelligent inquiry into existing facts and the devising of adequate methods by which these conditions can be remedied, rather than by the presentation of a mass of hastily drafted, ill-digested measures on every conceivable phase of public health regulation. The weaknesses of our method, or rather lack of method, of enacting health laws are common to our entire legislative system. Physicians as practical scientists should lead the way in devising better and more accurate methods for health organization.

PRACTICAL PSYCHOTHERAPY

The need is great for sympathy and insight to perceive all aspects of cases which involve the mind as well as the body, and for a philosophy whereby a physician shall himself "see life steadily," and also "see it whole," and so assist his patient to a like view. To dispel false ideas which surround death with horror is surely an obvious duty; equally obligatory is it, when discussion is not feasible, to fill a patient's thoughts with all that can make his remaining life peaceful and happy. The belief is too general that psychotherapy consists in deceiving the patient for his own good. This is the method of a charlatan — but in such a rôle a physician can never be more than an amateur; for the charlatan succeeds best when he first deceives himself, and the true physician, not able for an instant to deceive himself, is but ill adapted to an elaborate deceiving of others. The physician who has a unifying philosophy of his own is thereby able to dispense with makeshifts and to speak convincingly to his patients, administering hope with truth, courage with frankness — and his sincerity will deepen public confidence. This confidence, surely due to science and disinterested motives, is often sacrificed unwittingly by the physician himself. He administers a therapeutic lie at the earnest solicitation of the patient's friends. Presently one of those friends falls ill, and the physician is puzzled to know why this new patient fails to respond to his words of encouragement and good cheer. The physician whose statements, uniformly squaring with facts, bear witness to his skill and to his sincerity, is the only one fitted to command the respect of the public and to inspire his patients with confidence in himself and hence with faith in his words.

THE SEAT OF HYDROCHLORIC ACID FORMATION IN THE STOMACH

Not long ago[1] we called attention to the recent contentions that, contrary to the current assumption, free hydrochloric acid is not formed within the cells of the gastric mucous membrane, but is presumably liberated on its surface. The parietal cells, to which the function of acid production has usually been assigned by a sort of process of exclusion, are neutral or alkaline even when hydrochloric acid is making its appearance in the interior of the stomach. Dr. López-Suárez[2] has gone a step further and asserts that the parietal cells are not primarily concerned in the acid production. It may reasonably be expected that the portions of the mucosa involved in the formation of hydrochloric acid or its precursor must contain a store of chlorid in some form. These newer observations, made by microchemical methods, indicate that in contrast with the chief cells

1. The Hydrochloric Acid of the Gastric Secretion, editorial, THE JOURNAL A. M. A., Jan. 25, 1913, p. 284.
2. López-Suárez, J.: Zur Kenntnis der Salzsäurebildung im Magen, Biochem. Ztschr., 1912, xlvi, 490.

of the gastric glands the parietal cells are either devoid of chlorid or at any rate very deficient therein. The question of their actual function is thus again brought into debate as it was many years ago. They may, of course, exert an indirect influence on the secretory act. The rapidity with which the act of secretion supervenes on a stimulus sent to the stomach makes it more than probable that the precursor of the hydrochloric acid — whether it be a simple chlorid or some labile organic chlorin compound — is stored in some abundance in the cells in readiness for the speedy functional response. If this be true, then those regions of the mucosa in which acid production is localized should exhibit a greater richness in chlorin than does the remainder of the secretory membrane. The hypothesis appears to be in correspondence with the facts, for the fundus portion as a rule has a larger content of chlorin than does the membrane of the pyloric region where the secretion is frequently alkaline in reaction. The contrasts are not large, yet they are sufficiently distinct to merit further consideration. Perhaps the chemical physiology of gastric secretion will experience some decided revision in the near future.

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THE ENZYME CONTENT OF SALIVA

The question of variations in the amylolytic power of the saliva is scarcely one that is likely to elicit the interest of physicians. The saliva of practically all human individuals is so conspicuously endowed with starch-digesting power that minor percentage differences are at best of only incidental significance. Other features and functions of the secretion of the salivary glands quite overshadow this one. From a purely theoretical aspect certain features involving variations in the output of enzyme deserve more than passing notice. Not only have alterations in the digestive efficiency of the saliva been associated with different periods of the day, with the ingestion of food, with sex and with age, but it has repeatedly been alleged that there is some relation between the character of the diet and the relative richness of the saliva in enzyme. This statement involves more than appears on the surface. It virtually postulates that our digestive secretions are wonderfully responsive to the character of the food intake. Here, then, is a sort of adaptation to diet. Every assumption of this sort deserves the closest scrutiny and calls for corroboratory investigation; for the principle of adaptation is one which may, if established, be applied to therapeutic ends. Diet has been credited with innumerable possibilities, and the readjustment of the functions thereby is one of the many. A recent investigation by Hirata[1] in Japan serves to confirm the contention of Mendel and his co-workers[2] in this country that as yet the evidence in relation to salivary adaptation belongs in the category of "not proven." Hirata maintains that the amylolytic power of human saliva collected at different periods of the day has essentially the same value. The variations are minimal. The digestive capacity remains unaltered by the incidence of meals and the character of the diet. It is independent of the volume of saliva secreted, of sex and (except in infancy) of age; neither have significant variations been made out in patients representing a series of diseased conditions. From the experience already on record, these negative findings are only what might have been expected.

1. Hirata, G.: Ueber die diastatische Kraft des menschlichen Mundspeichels, Biochem. Ztschr., 1912, xlvii, 167.
2. Mendel, L. B., and Underhill, F. P.: Jour. Biol. Chem., 1907, iii, 135; Mendel: Medical Record, August 27, 1910.

Medical News

ALABAMA

Salvation Army Dispensary.—A free dispensary has been opened in Anniston under the auspices of the Salvation Army Drs. J. W. Landham and Baxter Rittenberry are in medical charge of the institution.

State Association Meeting.—Plans for the entertainment of the delegates in attendance at the annual meeting of the Medical Association of the State of Alabama, to be held in Mobile, April 15-17, include a ball game April 16, a reception for delegates and the ladies on the same evening and a boat ride down the bay, April 17. Dr. P. J. M. Acker is chairman of the committee on arrangements.

Memorial Hospital Opened.—The John A. Andrew Memorial Hospital at the Tuskegee Normal and Industrial Institute was formally opened and dedicated, February 21. The hospital, which was donated by the granddaughter of the war governor of Massachusetts has been erected at a cost of $50,000. At the dedicatory exercises, addresses were made by the Hon. Seth Low, chairman of the board of trustees of the institute; principal Booker T. Washington; Drs. John A. Kenney, medical director of the hospital; George C. Hall, Chicago; U. G. Mason, Birmingham, and W. A. Warfield, surgeon-in-chief of the Freedmen's Hospital, Washington, D. C. Clinics were held in connection with the dedication of the hospital under the direction of Dr. John A. Kenney, the medical director, the physicians named above, and Dr. C. V. Roman, Nashville, Tenn.

ARKANSAS

Bequeaths Professional Property to Physicians.—By the will of the late Dr. William Elza Green, Little Rock, his medical library is bequeathed to the physicians of the city, and his cabinet of surgical instruments and other instruments to his friends of the medical profession.

New Officers.—Pike County Medical Association at Delight, February 20: president, Dr. N. J. Slaughter, Delight; secretary-treasurer, Dr. R. Q. McClure, Glenwood.——Sevier County Medical Society at DeQueen: president, Dr. W. E. Wisdom; secretary-treasurer, Dr. C. E. Kitchens, both of De Queen.——Franklin County Medical Society at Ozark: president, Dr. W. M. Wear, Etna; secretary-treasurer, Dr. Thomas Douglass, Ozark.——Randolph County Medical Society at Pocahontas: president, Dr. H. L. Throgmorton; secretary, Dr. G. M. Black, both of Pocahontas.——Phillips County Medical Society at Helena: president, Dr. H. M. Thompson, Marvell; secretary, Dr. W. R. Orr, Helena.——Boone County Medical Society at Harrison: president, Dr. L. H. Callen, Bellefonte; secretary, Dr. F. B. Kirby, Harrison.

CALIFORNIA

Dinner to Dr. Moore.—Dr. B. F. Church, Redlands, gave a dinner, February 11, to forty physicians of that city in honor of Dr. Ross Moore, Los Angeles, who later made an address on "Diagnosis in Mental and Nervous Diseases."

Popular Medical Lectures.—Stanford University Medical Department will continue the series of lectures inaugurated by Cooper Medical College. The first was given February 7 by President Jordan on "Eugenics" and succeeding lectures are given on alternate Friday evenings.

Hospital Notes.—The cornerstone of Pomona Valley Hospital was laid at Pomona, February 8. The building is to cost $50,000 and will be a two-story and basement structure of fireproof construction.——The College of Physicians and Surgeons of the University of Southern California together with the Home Mission Society of the Methodist Episcopal Church, South, has established a free medical clinic at Seventh and Mimosa Streets, Los Angeles.——Dr. William D. Dunn, Imperial, has offered a tract of 150 acres of land and a house to be used as a sanatorium for the treatment of tuberculosis.

Personal.—Dr. J. L. Benepe, San Jose, was painfully injured in an automobile collision, recently.——Dr. H. J. Trachman,

Santa Rosa, has returned after six months of study in Vienna.——Dr. Louis G. Reynolds, Sacramento, sailed for Europe, March 1.——Dr. M. V. Mulcahy, San Jose, has been appointed physician of the California Division of the Modern Woodmen of America.——Dr. Henry Sherry has been reelected president of the Pasadena Hospital Association.——Dr. Madeline E. Johns, San Francisco, was attacked by an insane man with murderous intent February 3, and seriously injured.

ILLINOIS

County Hospital Contract Awarded.—The St. Clair County Board of Supervisors, on March 1, awarded the contract for the building of the addition to the County Hospital, Belleville. The building will have extensive porches for tuberculosis patients and the expense of construction is estimated at about $15,000.

Trip to Panama.—Among those who made the trip to Panama under the auspices of the Illinois State Medical Association were the following: Dr. and Mrs. E. P. Raab, Belleville; Dr. and Mrs. E. J. Brown, Decatur; Dr. and Mrs. H. H. Roberts, Maywood; Dr. and Mrs. F. W. Werner, Joliet; Dr. and Mrs. Geo. M. Peairs, Joliet.

Antituberculosis Association Issues Bulletin.—The first issue of the *White Plague Bulletin*, published by the Winnebago County Antituberculosis Association, appeared last month. It is a four-page leaflet containing a list of the officers, a notice of the students' tuberculosis essay test, notes on the hygienic treatment of tuberculosis, and a report on the work which has been done by the local Visiting Nurses' Association during the year.

Medical College Transferred to University.—The ceremonies in connection with the formal transfer of the College of Physicians and Surgeons to the University of Illinois were held March 6. The principal address of the occasion was delivered by President James of the university; Dr. D. A. K. Steele, president of the college, handed over the deed and bill of sale to the university, and Mr. W. L. Abbott, president of the board of trustees of the university, accepted the gift. Addresses were also made by Dr. W. E. Quine, dean of the college, Dr. Arthur R. Edwards, dean of Northwestern University Medical School, and Dr. A. D. Bevan of Rush Medical College. It is announced that the present staff of instructors, lecturers and employees will be retained at least until June 30.

Personal.—Dr. Hartwell C. Howard, Champaign, has celebrated the sixty-third anniversary of his graduation from Starling Medical College. Dr. Howard is now said to be the oldest active practicing physician of the state.——Dr. Frederick K. Sidley, Peoria, was painfully injured in a street-car accident February 28.——Dr. and Mrs. S. M. Wylie, Paxton, have returned from the South.——Dr. R. R. Greene, Braidwood, is ill at his home as the result of a cerebral hemorrhage.——Dr. C. C. Atherton, a member of the staff of the Elgin State Hospital, has been appointed senior physician at the Lincoln State School and Colony.——Dr. C. H. Ayling, Gridley, who has been ill with erysipelas, is reported to be improving.——Dr. Herman Milbacher, Aurora, sustained painful injuries in a fall, March 2.

Chicago

Additional Appropriation for Health Department.—The finance committee of the city council on March 5, voted to appropriate an additional sum of $15,000 for the fight against contagious diseases.

County Hospital Cornerstone Laid.—The cornerstone of the new Cook County Hospital was laid March 8. The dedicatory exercises were in charge of President A. A. McCormick of the board of county commissioners.

Tuberculosis Society Organized.—The Children's National Tuberculosis Society has been incorporated by Drs. C. Vermeren, C. B. Saunders and Paul Burmeister, to maintain camps and homes for the treatment of tuberculosis.

Personal.—During the stay of Dr. S. Weir Mitchell in Chicago, in addition to his address before the Physicians' Club, he was entertained at dinner by Dr. and Mrs. Nathan S. Davis and at a luncheon by Mrs. Cyrus Hall McCormick at which Dr. Mitchell read selections from his poems.——Dr. and Mrs. C. F. Klaus and son, Dr. and Mrs. C. C. Eldred, Drs. E. E. Kolar and F. J. Patera have started on a trip to the Canal Zone.——Dr. and Mrs. Frank X. Walls sailed for the Mediterranean, March 15.——Dr. Joseph Shanks has been appointed chairman of a committee to establish a free dispensary to the poor on the northwestern side of the city.

INDIANA

New Officers.—Indiana Society of Anesthetists: president, Dr. E. A. Guedel; secretary-treasurer, Dr. H. L. Connor, both of Indianapolis.

Hospital Opened.—The new St. Vincent's Hospital, Indianapolis, was opened for patients, February 15. It is a five-story fire-proof building occupying an entire block, and containing 325 rooms. Special operating-rooms have been equipped for the gynecologic and eye, ear, nose and throat departments and the hospital also has a large clinic amphitheater.

Personal.—Dr. Carleton B. McCulloch, Dr. and Mrs. J. Riley Eastman and Dr. and Mrs. L. C. Cline, Indianapolis, have started on a trip to South America and the Canal Zone.——Dr. Henry Jamison, Indianapolis, has sailed for Italy.——Dr. Charles E. Ferguson, Indianapolis, is taking a pleasure trip to Egypt.——Dr. and Mrs. J. E. Hoover and Dr. John M. Cunningham, Indianapolis, who have been spending the winter in Florida, have returned.——Dr. H. B. Shacklett, New Albany, has been reelected a member of the board of directors of the Indiana Association for the Study and Prevention of Tuberculosis.——Dr. H. G. Morgan has been elected a vice-president and Dr. W. F. King, Indianapolis, secretary-treasurer of the Indiana Sanitary and Water-Supply Association.

KENTUCKY

Personal.—Dr. D. S. Roberts, West Point, was seriously injured in a runaway accident, February 28.——Dr. R. B. Gilbert, Louisville, was seriously and Dr. Amos Davis, Owensboro, slightly injured in a collision between the ambulance in which they were going to the Jewish Hospital and an automobile, February 27.——Dr. J. N. Powell, Corydon, is reported to be critically ill.——Dr. Charles W. Stroup, Ludlow, has been appointed a member of the clinical staff of the children's department of Miami Medical College, Cincinnati.

Vital Statistics.—By the report of Dr. J. N. McCormack, secretary of the State Board of Health, the birth returns for 1911 numbered 60,372, and for 1912, 61,199. The deaths for 1911 were 30,583, and for 1912, 29,649. The deaths from consumption for 1911 were 5,181, and for 1912, 4,728. Typhoid showed a reduction in prevalence and fatality, being 1,035 in 1911 and 758 in 1912. Diphtheria showed a slight gain, being 545 in 1911 and 687 in 1912. Cancer shows an increase, 905 in 1911 and 943 in 1912. The year 1912 shows 39 per cent. of the deaths were from diseases that can and ought to be prevented.

LOUISIANA

Leper at Calhoun.—Dr. Thomas E. Wright of the State Board of Health has discovered a case of leprosy in Calhoun. The diagnosis was confirmed by Dr. Isadore Dyer and the patient has been taken to the Lepers' Home for treatment.

Against Expectoration.—Dr. Oscar Dowling, president of the State Board of Health, has had distributed in New Orleans 5,000 signs warning the public against spitting on sidewalks in street cars and public places and that violators of this rule will be prosecuted.

Porter Holds Dual Position.—At the meeting of the State Board of Health, February 25, a motion was passed that Dr. Sidney S. Porter, chief of the Rockefeller Hookworm Commission, be elected to the position of chief sanitarian of the state irrespective of the position he at present holds.

Personal.—Dr. F. H. Carruth, Lobdell, fractured his right forearm March 1 while cranking his automobile.——Dr. Charles Faget, New Orleans, is reported to be seriously ill with diphtheria.——Dr. Wiltz M. Ledbetter, Shreveport, formerly city physician, is reported to be critically ill at the Shreveport City Hospital, following an operation for appendicitis.

Object to Importation of Charity Patients.—The authorities of Charity Hospital of New Orleans, under instructions from the board of administrators, has notified health officials of Mississippi and Alabama that the practice said to obtain in these states of sending their destitute sick to the hospital is considered an imposition and will no longer be permitted.

The New Hotel Dieu.—It is reported that the contract for erecting the new Hotel Dieu buildings has been awarded. This contract calls for the construction of the laundry, power-house, free clinic, operating wing to house the Bruguieres Memorial, and an addition with 100 beds. This contract calls for about $200,000 of the $500,000 to be expended in the construction of the institution.

Inspection Completed.—Dr. S. S. Goldwater, New York City, who has been making an inspection of the Charity Hospital,

New Orleans, has completed his work and left for St. Louis and Cincinnati. Local members of the profession declare that Dr. Goldwater's visit has resulted in the elimination of opposing factions, and bringing up cooperation and work for the good of the institution. Dr. Goldwater's formal report will be forthcoming later.

French Hospital Dedicated.—The renovated and modernized French Hospital, New Orleans, one of the oldest institutions of its kind in the United States and conducted by the Société Française de Bienfaisance, was dedicated with simple ceremonies, February 23. The medical staff of the institution consists of Drs. George Joseph Tusson, Marion Sims Souchon, I. J. Laurans, A. D. Mouledous, O. L. Pothier, J. A. Estopinal and J. O. Weilbaecher.

MARYLAND

Baltimore

Children's Ward for Hospital.—A children's ward is planned at St. Joseph's Hospital to cost $18,000. Of this amount, $3,000 is already in hand.

Hospital for South Baltimore.—Plans for the South Baltimore Eye, Ear and Throat Charity Hospital are being selected, and it is reported that work on the new hospital will begin before April 1. It is to be a three-story building, 65 by 90 feet.

Personal.—Dr. John C. Hemmeter has recovered from his recent illness and resumed his lectures at the University of Maryland.——Dr. Henry Barton Jacobs has been reelected president of the Maryland Association for the Prevention and Relief of Tuberculosis.

Another College Merger.—The union of the University of Maryland Medical Department and the Baltimore Medical College is said to be practically assured, the faculties having agreed on the terms of merger. The members of the faculty of the latter institution will retain their positions in the new school and three of them will become members of the University Board of Regents. The merger will not take effect until after the present session and the terms of agreement will be submitted to the university regents next week.

MASSACHUSETTS

Plan Hospital for Palmer.—A meeting was held in the rooms of the Palmer Business and Social Club, February 14, to consider the establishment of a hospital in the town of Palmer.

New Hospital.—Mrs. Emma Wing has given her residence in Palmer to be used as a hospital for the city, and her daughter has agreed to defray the expense of building and equipping an operating department and pathologic laboratory.

Celebrates Anniversary.—Dr. William Sidney Severance, dean of the medical profession of Greenfield, entertained the members of the Greenfield Doctors' Club, February 19, at a banquet in honor of the sixtieth anniversary of his graduation in medicine.

Work of the Boston Dispensary.—The second issue of the *Boston Dispensary Quarterly* is devoted chiefly to the work of the dispensary in caring for children. The institution cared for more than 17,000 children during the last year. The children's work at the dispensary is divided into: the new hospital; the general medical out-patient clinic for the cure, study and prevention of the diseases and problems of infancy and childhood; the service in the various medical and surgical specialties, provided by the appropriate clinics of the dispensary; treatment of sick children in their homes, the only city-wide service of the kind in Boston, provided by its district physicians, who care annually for approximately 5,000 children, mostly cases of acute illness; the teaching of medical students of the Harvard and Tufts Medical schools, and the provision of opportunities for scientific research; social service, provided primarily through the Social Service Department, also through the Instructive District Nursing Association, and carefully worked-out plans of cooperation with the chief philanthropic, educational and municipal agencies in Boston; team work with the public school system; and cooperation with the school physicians and school nurses, by which about 4,000 school children annually are given needed treatment in its clinics, on reference from the medical authorities of the school system.

MISSOURI

Luncheon to Dr. Lumsden.—The St. Joseph-Buchanan County Medical Society gave a luncheon in honor of Surgeon L. L. Lumsden, U. S. P. H. S., March 6.

New Officers.—Barton County Medical Society at Lamar: president, Dr. G. D. Allee; secretary-treasurer, Dr. A. B. Stone, both of Lamar.——Lafayette County Medical Society at Lexington: president, Dr. J. W. Mann; secretary, Dr. J. Q. Cope, Lexington.

New Hospital.—The Methodist Deaconess Hospital Association, St. Joseph, which now conducts Ensworth Hospital, has decided to purchase residence property at Fifth and Farion Streets for $20,000 and to erect thereon a fireproof, four-story, hospital building. The new building is to be completed within two years.

Milk Commission Seeks Incorporation.—Drs. George C. Mosher, Andrew W. McAlester, J. E. Hunt, Frank C. Neff, A. G. Null and Edwin H. Schorer, all of Kansas City, the Medical Milk Commission of the Jackson County Medical Society, seek a decree of incorporation in a petition filed in the circuit court, March 1. The commission is formed to examine, test and certify milk from such dairies as may request this service, and no charge is to be made for this work.

Personal.—Dr. W. P. Bradley, Windsor, has been elected superintendent, and Drs. C. B. Simcoe, Jefferson City; J. W. Dawson, Eldorado, and W. B. Summers, Conway, have been appointed assistant physicians at State Hospital No. 3, Nevada.——Dr. Bondurant Hughes, Keytesville, has been appointed superintendent of the State Tuberculosis Sanatorium, Mount Vernon.——Dr. W. S. Fast, St. Joseph, has been appointed superintendent of the Nebraska Institute for the Feeble-Minded, Beatrice.——Dr. A. C. Pettijohn, superintendent of the St. Joseph City Hospital, was operated on for the removal of gall-stones in Rochester, Minn., February 21. ——Dr. T. R. Thornton, Lee's Summit, fell on an icy walk near his home, February 20, fracturing his right arm near the wrist.

St. Louis

Special Quarters for Inebriates.—The board of police examiners has provided special quarters for inebriates and drug addicts in the city hall, and dispensary physicians will be constantly on duty.

New Dispensary Dedicated.—The Holy Cross House Dispensary, 2500 North Twelfth Street, was dedicated by Bishop Tuttle, March 2. Last year the dispensary department treated more than 1,000 patients. It is to be in charge of Dr. R. L. Hild.

Hospital Saturday and Sunday Receipts.—It was announced at the annual meeting of the Saturday and Sunday Association, February 18, that the largest collection in the history of the Association was that taken last fall, amounting to $47,837.03.

The New Children's Hospital.—Earth was broken, February 22, for the new Children's Hospital at King's Highway and the Wabash tracks. The building is to cost $170,000 and has been given by Mrs. John Fowler in memory of her mother, the late Mrs. Elizabeth J. Liggett.

Personal.—Dr. James M. Scott, Kansas City, a pioneer in *x*-ray work in the United States, was obliged to have his right arm amputated above the wrist recently as the result of early experiments with the Roentgen ray.——Dr. and Mrs. M. B. Clopton and Dr. and Mrs. H. G. Mudd sailed for the Caribbean Sea and the Canal Zone, March 4.

NEW JERSEY

Personal.—Dr. Federico Luongo has been appointed a member of the Board of Health of Orange.—Dr. G. N. J. Sommer, Trenton, has returned from a visit to the west coast of Florida.

New Cottages at Epileptic Village.—During this month three new cottages will be opened at the State Village for Epileptics, Skillman. Two of these will be for regular patients and will accommodate about thirty each. The third will be a cottage for feeble-minded men to be filled by transferring from the Vineland Training School, male patients, wards of the state, who were committed to the institution in their youth, and have since become adults.

New Surgical Society.—The Society of Surgeons of the State of New Jersey was organized at Trenton, January 15, and the following officers were elected: president, Dr. Robert M. Curts, Paterson; vice-presidents, Drs. Edward M. Zeh Hawkes, Newark, and Paul M. Mecray, Camden; secretary, Dr. G. N. J. Sommer, Trenton; treasurer, Dr. Henry Spence, Jersey City, and chairman of the committee of scientific work, Dr. Philander A. Harris, Paterson. The object of the society is to bring into one organization all surgeons of the state and to advance the interest of surgical science. The active membership at present is limited to visiting surgeons of recognized public

hospitals and the associate membership to assistant surgeons and others who are making a specialty of surgery.

Medical Staff Elected.—At the annual meeting of the managers of Mercer Hospital, Trenton, the following medical staff was elected: medical director, Dr. George H. Parker; consulting surgeons, Drs. Thomas H. Mackenzie and Joseph M. Wells; consulting physicians, Drs. Samuel S. Stryker (Philadelphia) and William A. Clark; consulting neurologist, Dr. Henry A. Cotton; attending surgeons, Drs. Nelson B. Oliphant, George H. Parker and David B. Ackley; attending physicians, Drs. Paul L. Cort, George R. Moore, Walter A. Taylor and William A. Newell; gynecologists, Drs. Joseph B. Shaw and Edward S. Hawke; ophthalmologists, Drs. Charles F. Adams and Charles J. Craythorn; roentgenologist, Dr. Charles H. Holcomb, and pathologist, Dr. Frederick S. Hammond.

NEW YORK

Haverstraw Institution Presents Report.—The New York State Hospital for Crippled and Deformed Children, West Haverstraw, has submitted its twelfth annual report to the legislature. During the year forty-four new patients were received and 103 were treated; this is twenty-one more than during the preceding year. Of the number treated 40.48 per cent. were afflicted with tuberculosis of the joints or spine.

Think Ellis Island Passes Feeble-Minded.—The State Board of Charities, in making recommendations to the governor for enlarging the facilities for caring for defectives in this state, lays special emphasis on the fact that it is generally conceded that the facilities at Ellis Island for discovering the feeble-minded who seek to enter there, are entirely inadequate and that this matter must be given primary consideration. The communication points out that there are 30,000 defectives of which number the state makes provision for only 6,000.

New York City

Brooklyn Plans Night Camp on Ferry Boat.—The tuberculosis committee of the Brooklyn Bureau of Charities favors the establishment of a night camp for tuberculosis patients on a ferry boat which is now used as a day camp for tuberculosis and is moored in the East River.

Open-Air Wards at Mount Sinai.—The new open-air roof wards of Mount Sinai Hospital were opened for inspection March 7. They are the gift of Albert E. Goodhart and Charles A. Wimpfheimer and are intended not only for tuberculosis patients, but for all who require such outdoor conditions.

Personal.—Dr. Milton J. Strahl, Brooklyn, who has just completed his four years' course as resident physician in the Williamsburg Hospital, was given a dinner by the interns of the institution, February 28, at which he was presented with a set of surgical instruments.——Dr. Horace Greeley of the division of communicable diseases of the health department and borough chief of Brooklyn, since 1905, has been transferred to the division of contagious diseases as diagnostician and will make his headquarters at Staten Island.——Dr. B. F. Knause has been appointed borough chief of Brooklyn.——Dr. G. A. Merrill has been placed in charge of the Brooklyn Eastern District tuberculosis clinic, vice Dr. Knause, transferred.——Dr. John Addison Fordyce has been appointed professor of dermatology in the College of Physicians and Surgeons to succeed Dr. George T. Jackson, resigned.

Disappearing Diseases.—Dr. Guilfoy, the Registrar of Vital Statistics of New York has recently published some interesting figures from former records showing what modern methods have done in the way of abolishing certain diseases. Asiatic cholera was formerly a frequent visitor to the city, there being 5,000 deaths from this scourge in Manhattan and the Bronx in 1849, 2,500 in 1854, and 1,100 in 1866. During the last thirty-six years there have been only 11 deaths from this disease. Typhus fever was prevalent from the year 1868 onward, there being 200 deaths attributed to it in 1893. If the same death-rate from malarial fever had prevailed in 1912 as in the period from 1880 to 1890, there would have been 1,400 deaths from this cause; the number that actually did die from it was 29. The most striking conquest has been made in the case of small-pox which was practically always prevalent prior to the year 1876. Since that time the epidemics have become milder and of shorter duration until last year there were only two deaths from this disease in a population of over 5,000,000 people.

Hospital News.—In the new general post-office opposite the Pennsylvania Terminal an emergency hospital is to be established and also a disinfecting plant and a steam drying plant where the clothes of mail carriers who get caught in the rain may be cared for and the mail bag
Announcement has been made that
York Nursery and Child's Hospital,
ington Avenue between Fiftieth an
be sold at public auction on March
centrate all its work for the present in its
Asylum holdings at Amsterdam Avenue and Sixty-
Street.——At the annual meeting of the directors of the German Hospital the report of the officers showed that 48,228 patients had been treated in the institution during the year 1912. Of this number 6,935 were treated in the hospital department. In the dispensary department 106,849 consultations and treatments were given. The medical staff comprises about 140 physicians. The demands on the institution make new additions necessary but in spite of many liberal contributions, the fund is not sufficient to cover the cost of the contemplated buildings.

Fighting the Dispensary Abuse.—The County Medical Society is making a determined fight to have the law in regard to abuse of dispensary privileges enforced. The law which has been on the statute books for fourteen years and has never been enforced provides that any person who obtains medical or surgical treatment from any licensed dispensary on false representation shall be guilty of a misdemeanor and on conviction shall be fined not less than $2 or more than $250. Imprisonment may be inflicted until the fine is paid. The committee of fifteen appointed by the county society to investigate existing conditions has found that during the year 1911, 665,000 new patients were treated in the dispensaries of the city, and that in 1912 these figures were exceeded. As is was impossible to make an investigation of so many cases it was decided to investigate 1,000 cases chosen from thirteen representative dispensaries. An expert social worker was employed and her investigations showed that the great fault with these institutions was the lack of uniformity in keeping records. An interesting fact brought out by the investigation was that a considerable proportion of the applicants were not residents of New York at all. Of 157 persons applying in a limited period, fifty-seven were from out of town. The committee suggests a campaign of publicity in order that the public may understand that with very few exceptions physicians are giving their services freely in the dispensaries and the present laxity in the enforcement of the dispensary law is robbing both physicians, philanthropists, and the worthy poor, who because of the crowded condition of the dispensaries do not receive the careful treatment to which they are entitled. The committee further advised that the city be districted and that each institution refuse applicants living out of its district and it also recommended that the county society give its support to the associated outpatient clinics.

OHIO

State Society Meeting.—At a meeting of the council of the Ohio State Medical Association, held February 27, it was decided to hold the next meeting at Cedar Point, September 2-3-4.

The New State Hospital.—The new State Hospital for the Criminal Insane, Lima, will be completed in September of next year; it will have cost nearly $2,000,000 and will represent eight years of investigation and work.

Hospital News.—A new infirmary for Lucas County, to accommodate 150 patients and to be erected on a site adjoining the present county hospital at a cost of $100,000, is recommended by the medical staff of the institution.——A hospital is to be erected in Newark, to cost $60,000, to be three stories in height and of fireproof construction.

Personal.—Dr. Robert C. Longfellow has been chosen exalted ruler of the Toledo lodge of Elks.——Dr. A. J. Shoemaker has been appointed night physician at the State Penitentiary, Columbus, vice Dr. A. Delaplane.——Dr. H. J. Powell Van Buren, who has been seriously ill, following an operation four months ago, has recovered and resumed practice.

PENNSYLVANIA

Hospital Addition Almost Ready.—The new private ward addition to the York Hospital erected at a cost of $25,000, is so nearly ready that it will be opened April 1.

New Officers.—Reading Medical Association, February 28: president, Dr. Walter M. Bertolet; secretary, Dr. Claude W. Bankes.——South Scranton Physicians' Association, February 27: president, Dr. M. H. Quinn; secretary-treasurer, Dr. Grace McMahon.——The Medical Club of Harrisburg has applied for a charter. The president is Dr. Samuel Z. Shope and the secre-

larvey Miller.——Womans Medical Society, Pitts- ident, Dr. Lula Robin Goldsmith, Pittsburgh; retary, Dr. Viola Allison, Tarentum.

—The house of Dr. H. G Diefenderfer, Beaverdale, yed by fire, February 24, with a loss of $3,500, overed by insurance.——Dr. Laurence A. Sheridan appointed a member of the Board of Health of rre.——Dr. William F. Marks, for thirty-three years of the Reading Board of Health, has resigned.—— . Miller, Pottsville, who has been ill for four weeks, to Hot Springs, Va., for treatment.——Dr. B. F. Shires, Patton, who underwent operation, February 24, in a hospital in Philadelphia, is reported to be doing well.

Philadelphia

Rush Society Lecture.—Dr. Theodore C. Janeway of Columbia University delivered the third lecture of the Rush Society, March 14. His subject was "Nephritic Hypertension."

Diphtheria Building Added to Municipal Hospital.—A new structure accommodating 120 patients and for the exclusive use of diphtheria patients, has just been completed at the Hospital for Contagious Diseases at a cost of $122,680.

Transfer Insane From Blockley.—The Philadelphia General Hospital transferred fifty-four patients to the Norristown Insane Asylum, March 5, that institution having been relieved of some of its patients by the opening of Rittersville Asylum.

Baby-Saving Show in New Quarters.—The baby-saving show opened at the Benson School at Twenty-Seventh and Wharton Streets on March 5, and will remain until March 15. The show, given under the auspices of the Child Hygiene Association, has arranged for lectures for each evening.

Ask Children's Aid in Mosquito War.—Director Cooke of the Department of Public Works, has issued a circular printed in large primer type and short words and containing illustrations for distribution among children. The circular describes the way that mosquitoes multiply and tells children how they may help in driving out the pests. Boy Scouts and other organizations are invited to act as agents of the department in promoting the campaign.

Personal.—Dr. William H. Wells has been appointed assistant professor of obstetrics in Jefferson Medical College.——Dr. George M. Coates has resigned as city medical inspector in the Bureau of Health.——Dr. S. Solis-Cohen, medical adviser to the Jewish Consumptive Institute, has resigned.——Dr. Thomas McCrae has been appointed a visiting physician to the Pennsylvania Hospital.——The home of Dr. Robert N. Downes, one of the oldest practitioners of Germantown, was damaged by fire to the extent of about $10,000, March 2.

Cleeman Dormitory.—Plans for the new Cleeman Dormitory at the University of Pennsylvania are now in the hands of the architects and work will commence on the buildings so soon as the Cleeman estate is settled. The dormitory will be erected in the large quadrangle and will project from the new memorial gate toward the west, forming the third side of a smaller quadrangle within the larger one. The building will cost about $50,000 and will be called Cleeman Hall, in honor of Dr. Cleeman's brother, Ludwig C. Cleeman, in whose memory it is erected.

Phipps Institute Near Completion.—The new building of the Phipps Institute for the Treatment of Tuberculosis is nearing completion and will be opened to patients in three weeks, although the formal opening and dedication will not take place for at least six weeks. The building is of brick with white marble trimmings and is five stories in height in addition to a light and well-ventilated basement. It has a frontage of 132 ft. and contains two wings, the structure standing clear of any other edifice. The basement contains museum, lecture room, library, boiler plant, domestic science classrooms for nurses, laundry and mechanical and emergency rooms. All the first floor is given over to the general offices, waiting room for visitors and patients, examination quarters, and other rooms needed in administration work. The second floor contains doctors and nurses' quarters, laboratories, technical and experimental sections. The third, fourth and fifth floors are devoted entirely to patients. On all these floors open-air porches are constructed facing Starr Garden Park.

Conference on Mental Hygiene.—A conference to discuss mental hygiene under the auspices of the National Committee for Mental Hygiene, will be held in Philadelphia, March 17-22, inclusive. On March 15 there is to be a discussion, antecedent to the opening of the conference, at a long table luncheon at the Hotel Walton, at which Dr. D. J. McCarthy is to preside and at which addresses will be delivered by Mr. Clifford W. Beers, secretary of the National Committee, on "Necessity for Organized Work in the Conservation of Mental Hygiene"; by Dr. Elizabeth C. Spencer, Norristown, on "What the State is Doing and Can Do to Conserve Mental Health"; by Dr. Joseph S. Neff on "The Maintenance Responsible for Mental Health and How to Meet This Responsibility"; by Mrs. Thomas S. Kirkbride on "Mental Health and a Progressive Social Conscience"; by Dr. Oliver P. Cornman, Philadelphia, on "Mental Hygiene as a Factor in Education," and by Dr. Woods Hutchinson, New York City, on "The Relation of Eugenics to Mental Health."

WASHINGTON

Sanatorium Changes Hands.—The Tacoma Private Sanatorium at North First Street and Tacoma Avenue was sold, March 1, by the American Casualty Company to Drs. S. L. Blair, G. M. Steele and E. A. Montague. The hospital is a three-story building with accommodation for thirty-five patients. Dr. Blair will remain as superintendent of the institution.

Health of Washington.—The ninth biennial report of the State Board of Health for 1911-12 shows that the state of Washington has an efficient board of health and that it keeps close observation of all conditions relating to health and sanitation. Statistical tablets are shown of the proceedings and the state conferences of health officers are set forth at length in the report.

Personal.—Dr. C. A. Betts, M. R. C., U. S. A., has resigned and will enter private practice at Seattle about April 1.——Dr. J. T. Coleman, mayor of Chehalis, has been appointed health officer of Lewis County.——Dr. A. B. Cook, Colville, has moved to Anacortes.——Dr. James B. Eagleson, Seattle, fractured his right wrist and sustained severe cuts and bruises by the overturning of his automobile, February 25.

GENERAL

American Medical Colleges Establish Branches in China.—The University of Pennsylvania has opened a medical college in Canton; Harvard Medical School has begun a similar work at Shanghai, while the new Yale University at Chang-Sha has established a medical department.——There are practically no medical missions in Japan, although two of the foreign hospitals are still maintained. Japan now has her own medical science along modern lines.

State and Federal Quarantines Combine.—State and national health officials have arranged that beginning March 1, both the Pennsylvania state and the federal quarantine inspections of shipping inbound for Philadelphia shall be made at Marcus Hook. Formerly ships bound up the Delaware were boarded at Reedy Island by the federal quarantine officials and two hours later the examining process was repeated by the state quarantine authorities at Marcus Hook.

Medicine and Surgery at the Exposition.—The Panama-Pacific International Exposition to be held in San Francisco in 1915, announces that the exhibits in the domain of liberal arts will be especially interesting and significant. The mechanical side of surgery will be represented by a full collection of instruments and appliances and there will be also demonstrations of the most intelligent, modern methods employed in the prevention and mitigation of disease.

Alton Surgeons' Meeting.—At the meeting for organization of the Chicago and Alton Railway Surgical Association in Springfield, February 27, a general discussion was held on the formation of a hospital association, having in view the building of a hospital for the benefit of employees of the line, the following officers were elected: president, Dr. M. W. Pifard, Kansas City, Mo.; vice-president, Dr. James A. Clyne, Joliet, Ill., and secretary-treasurer, Dr. M. B. Titterington, Jerseyville, Ill.

Life Insurance Examiners Meet.—The medical section of the American Life Convention met in Hot Springs, Ark., February 26-28. The annual address was given by Dr. H. A. Baker, Pittsburgh, and papers were presented on "The Medical Director as a Substantial Factor in the Establishment and Development of a Legal Reserve Life Insurance Company," by Mr. Isaac Miller Hamilton, Chicago; "The Examiner Can Greatly Aid in the Conservation of Health," by Dr. J. T. J. Battle, Greensboro, N. C.; "Educating the Life Insurance Examiners," by Dr. W. S. Kendrick, Atlanta, Ga.; "The Rating of Appendicitis Applicants," by Dr. James H. Wroth, Albuquerque, N. Mex.; "Blood-Pressure," by Dr. C. R. Dudley, St. Louis; "The Standardization of the Medical Blank," by Dr. H. B. Miller, Lincoln, Neb.; "Some Vital Features of the Medical Blank,"

by Dr. Albert Seaton, Indianapolis; "Prognostic Value of Slight and Transient Albuminuria," by Dr. Henry Wireman Cook, Minneapolis, and "An Insurance Problem," by Dr. Frank W. Foxworthy, Indianapolis. The next meeting will be held in St. Paul, Minn., August 19-21.

FOREIGN

Deaths in the Profession Abroad.—In addition to those mentioned elsewhere, the profession has lost recently Prof. G. Vassale, of the chair of general pathology at the university of Modena, Italy. He was one of the leaders in the therapeutic utilization of internal secretions.——M. Albanese, professor of pharmacology at Rome, noted for his works on the ketones, adrenals, xanthin bodies, etc., and for his calling attention to the viscosity of the blood as an important property of organic fluids.——P. Niehans, professor of surgery at the university of Berne, aged 64.——K. Thue of Christiania, author of works on pulmonary tuberculosis, endocarditis and leukemia, aged 54. ——F. J. A. C. Howitz, formerly professor of gynecology and obstetrics at the university of Copenhagen, and author of the ten-volume work "Gynaekologiske og Obstetriske Meddelelser." His name is best known by his introduction of thyroid treatment for myxedema. He was 84 years old.——Sir Colvin Colvin-Smith, M.D., Aberdeen, L.R.C.S., Edinburgh, K.C.B.; honorary surgeon to Queen Victoria and King Edward and surgeon-general under King Edward V; a veteran of the Indian Mutiny, Burma War and Egyptian Campaign; died at his home in London, March 1, aged 83.——Rt. Hon. Balthazar Walter Foster, First Baron Ilkeston, P.C., 1906, M.D., Erlangen, Germany, 1864; L.R.C.S., Ireland, 1860; L.K.Q., Coll. Phys., Ireland, 1860; F.R.C.P., London, 1873; professor of medicine in Queen's College, Birmingham, from 1868 to 1892; president of the council of the British Medical Association from 1884 to 1887; a distinguished member of the Liberal party; parliamentary secretary to the Local Government Board from 1892 to 1895; died at his home in London, January 31, aged 73.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 22, 1913.

Stringent Measures Against Bovine Tuberculosis

The Board of Agriculture has issued a stringent order which aims at destruction of every cow found to be suffering from tuberculosis of the udder or to be giving tuberculous milk, as well as of all bovine animals suffering from tuberculosis with emaciation, as these are known to disseminate freely the germs of the disease. In confining the order to these forms of tuberculosis the board has not lost sight of the fact that it may be possible to take further action in the light of experience gained; but it feels that heroic measures taken at present would only defeat their own object. As the expense in the first five years is likely to be heavy, the government during that period will refund to local authorities half the compensation paid. In the event of an animal which is slaughtered by order being shown on post-mortem examination not to have consumption, the owner is said to have the full value and an extra £5.

Leprosy in London

The Metropolitan Asylum's Board (which controls all the hospitals for infectious diseases in London) has had under consideration a letter from a local municipal body, the Greenwich borough council, asking that leprosy should be made a notifiable disease, and hospital accommodation provided for the treatment of cases. Acting on the advice of their medical officer, the board has declined the application. The medical officer states that although there are always a number of lepers in this country, there is only one instance on record (in Ireland) of a previously healthy person developing the disease in these islands. In that case the man had been in the habit of sleeping in the same bed with his brother, who was a leper, and when the latter died wore his clothes. There is no doubt, he adds, that leprosy is contagious, but in a low degree, and that prolonged and intimate contact is necessary to permit of the spread of infection. The idea that leprosy is dangerously infectious is firmly rooted in the public mind, and is maintained by the deaths from leprosy which occur from time to time in the ranks of those who tend the sufferers from this disease. No count is taken, however, of the much larger number who escape infection. One sisterhood has had charge of a leper colony for fifty years, and during that time no sister has contracted the disease. The medical officer thinks that lepers who can be maintained in their own homes with proper sanitary precautions may safely be left there, and that those living in unhygienic conditions can be treated in the London hospitals or infirmaries without any risk to the other inmates.

Nostrums in Australia

In Australia the traders in nostrums are much exercised at certain recent legislation directed against the evil. The council of the Melbourne chamber of commerce has endorsed the protest made by the Sydney chamber of commerce against the regulations of the Board of Health of Western Australia requiring the publication of the formulas of infants' and invalids' foods and proprietary medicines. Replying to the protest, the minister, Mr. W. C. Angwin, has issued a statement that the regulations have been made under the provisions of the health act, which provide for the formulas appearing on the label or being deposited with the commissioner of public health. The health act contains certain drastic powers in connection with "patent medicines," and it is in order to have them effectively carried out that these regulations are now adopted. The sale of "patent medicines," for instance, containing deleterious drugs, may be prohibited, and the depositing of the formulas with the department will materially assist in the detection of any such deleterious substance. The regulation provides an alternative. The formulas may be deposited with the department instead of appearing on the bottle. All formulas deposited will be maintained in strict confidence. In regard to infants' and invalids' foods, the department is quite willing to permit the depositing of the formulas confidentially in the same manner as with "patent medicines." In the case of both "patent medicines" and infants' foods, the public should be able to know exactly what is being bought; when makers are unwilling to take the people into their confidence, then the public health department should know exactly what is there. Undoubtedly a great deal of fraud is perpetrated in this matter, and it is to prevent that, and also prevent injury to health from a use of such medicines and food that these regulations are now put forward.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 7, 1913.

Distribution of Physicians in Paris

In the *Bulletin Médical*, Dr. Desesquelle has published an article in which the distribution of Paris physicians by *quartiers* is given. Paris is divided into twenty *arrondissements*, each of which comprises four *quartiers*. Of these eighty *quartiers* there are forty in which there are less than a thousand inhabitants to each physician; twenty-one in which this number is between 1,000 and 1,880; nine between 2,225 and 2,738; nine between 3,134 and 6,370, and one in which there is one physician to 17,722 inhabitants. In one of the forty *quartiers* in the first category there is one physician for each ninety-four inhabitants, and in seven *quartiers* there is one physician for each 200 inhabitants.

Medical Examination of Men on the Army List

The minister of war has ordered physicians in examining men on the army list to pass no more than thirty an hour. It is hoped by this rule, permitting an average of two minutes to each man, to avoid the rejection of men who would be fit for acceptance after proper medical attention, and the provisional acceptance of men who fall short physically and are rejected at the final examination when about to be enrolled in the army. The number finally rejected amounts to several thousand each year. An innovation will be an examination of the normal functioning of the heart and respiratory organs.

The Clean Delivery of Bread

French bakers usually deliver loaves of bread in hampers or baskets which are often set down on the sidewalk or in the entrances to houses. On the ground that this is not a clean practice, the mayor of Lyons has issued a decree that all bread not delivered in closed wagons shall be completely wrapped, and the basket covered with a cloth.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 21, 1913.

Personal

According to newspaper reports which have appeared for the sixth time, von Noorden contemplates leaving Vienna next July and going to Frankfort-on-the-Main.

Newspaper Puffs for Friedmann's Method of Treating Tuberculosis

The following has been published in the *Deutsche medizinische Wochenschrift*: "The stamp 'Made in Germany,' as it relates to medicine, seems to have a great effect in America. To illustrate: While our medical and the better class of lay papers have ceased to discuss the matter, the columns of several American newspapers, according to clippings which have been sent to us, are filled with enthusiastic reports about this alleged new discovery, and all express the belief that at last a remedy has been found which will eliminate tuberculosis. According to the opinion of our regular New York correspondent, most of these puffs are written by the Berlin correspondents of the American newspapers." It is stated further that from New York reports are sent to the German newspapers. Thus the *Berliner Tageblatt* published recently the following cablegram: "Mr. Finlay, president of the Aetna National Bank, of New York, is said to have offered to a Berlin physician one million dollars if he succeeds in curing his son-in-law who suffers from tuberculosis. The proviso is made that the Berlin physician come personally to New York, and treat, besides the son-in-law of Mr. Finlay, ninety-nine other patients, of whom 95 per cent. must be cured. Grimm's fairy tales sometimes end with the words: 'Who believes this must pay a dollar.' Translated into American, this sentence would read: 'Who believes this must pay a million.'"

A few days ago one of the Berlin reporters sent the following notice to the press: "The discoverer of the new remedy for tuberculosis, Dr. Franz Friedmann, will arrive in the next few days in America. It is reported from there that the multimillionaire banker, Charles Finlay, offered the Berlin investigator the sum of one million dollars as soon as the latter arrives in New York and cures his son-in-law, Mr. Paris, of tuberculosis." In order to add humor to this sensation, another report comes from America that an American physician has likewise produced from turtle bacilli a remedy for tuberculosis with which he hopes to earn the million-dollar prize. If the steamer does not go too fast, the son-in-law of Mr. Finlay will probably be cured with this remedy by the time Dr. Friedmann arrives in New York.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 17, 1913.

Medical Students Protest Against the New Curriculum

The medical students of the first two years recently called a meeting to protest against several regulations of the new curriculum imposed on them. The new order requires the student to pass four different preliminary examinations in biology (botany, zoology and chemistry) along with practical examinations in anatomy and physiology, within a period of twelve weeks, while the old curriculum permitted him to spread these examinations over the end of the fourth and the whole of the fifth semester (or half-yearly term). The new regulations entail practically the loss of a semester (or half-year), and also the loss of scholarships which are connected with the line the student takes for his studies. A memorandum was addressed to the dean of the faculty and the Ministry of Education asking for abolishment of the onerous rules. In case these prove useless, energetic measures have been threatened.

Washington's Birthday

As is usual in this city, all Americans in Vienna are invited to the United States embassy, February 22, to celebrate Washington's birthday. As over 80 per cent. of the Americans in Vienna happen to be doctors of medicine pursuing their studies in the clinics and other medical institutes of this city, one may say that this evening is really an evening of physicians. Their patriotism is well illustrated by their attendance.

The Imperial Institute for the Care of Mothers and Infants

Acting on a suggestion of the emperor, part of the large sums collected on the occasion of celebrating the sixtieth anniversary of his succession to the throne, was devoted to the establishment of a permanent institute for the protection of infants and their mothers. The preliminary organization has been completed, and a report by the committee shows what has been achieved. Escherich was the initiator of the idea which Dr. Moll, his pupil, has carried out. The institute is intended to serve as a charitable and a teaching institution as well. Theoretical and practical instruction will be given to mothers and other women in the care and development of infants and children. Furthermore, midwives will be trained to become competent nurses for infants, an object of the utmost importance; also regular nurses will be instructed there. It will also serve as postgraduate school for doctors of medicine, for it is one of the chief endeavors of the institute to induce practitioners to cooperate with it in the care of infants. For this purpose it is intended to train the practitioners, especially in the provinces, that they may establish branch institutes in their districts, with the aid of the central institute. Naturally, the organization of the branches will be a useful addition to the teaching facilities in preventive and social medicine. In order to interest the poor, a special department for the instruction of mothers will be formed. There they will learn how to handle the healthy and the diseased baby, how to treat the milk and other food, and how to take care of their offspring generally. Besides, the charitable department will receive infants deprived of their mothers as well as destitute mothers with their babies. Older children will also be received to a limited number in order to teach the nurses how to manage the diseased child as a skilled help for the physician. There will be a department for the education of children with minor or major defects of education or mental condition. This will enable the nurse to learn an important part of her duties, and will reach children at present badly looked after if their parents happen to be poor. There is hardly any provision for such children in this country, only the barest attempts having been made about two years ago. The whole institute will be part of a general bureau for the protection and care of infants, to be extended over the whole Austrian empire, and to be an office of the ministry of the interior. The plans for the building have been completed and comprise space for eighty infants, twenty older children, thirty pupils, twenty wet-nurses and twenty mothers. The institute will be in working order in two years. Meanwhile its work is being led up to by the spreading of instruction as to its existence and its endeavors among the poorer classes of the population, as well as by the publication of instructive leaflets like the one called "A Vademecum for Mothers."

Marriages

HARRY BURTON STEVENSON, M.D., Sherwood, Md., to Miss Katherine Torpey of Philadelphia, at Buffalo, N. Y., February 25.

HOWARD LANE HULL, M.D., M. C., U. S. Army, to Miss Sarah Kelsey Buck of Bridgeton, N. J., at Philadelphia, February 17.

PHILIP PATRICK CRIMMINS, M.D., Brockton, Mass., to Miss Kerby Louise Langdon of Boston, at Brockton, February 26.

EDWARD A. STIERBERGER, M.D., of Union, Mo., to Miss Mamie A. Vitt of Franklin County, Mo., at Union, February 27.

GUIDO J. GIANFRANCESCHI, M.D., Rochester, N. Y., to Miss Marietta Strozzi of Buffalo, N. Y., Dec. 19, 1912.

ARNO KLEIN, M.D., Mount Vernon, Ind., to Miss Emily Virginia Brower of Williamsport, Pa., February 26.

WILLIAM JULIUS MASON, M.D., Portsmouth, Va., to Miss Flora Mae Watson of Baltimore, February 26.

MARK FREDERICK BOYD, M.D., Oskaloosa, Ia., to Miss Bertha Mary Beard of Iowa City, Ia., January 8.

JOSEPH C. TAYLOR, M.D., New York City, to Miss Marion R. Hungerford, in New York City, recently.

ALFRED DARWIN KIRBY, M.D., Champaign, Ill., to Mrs. Julia Beatrice Wilson, in Chicago, March 1.

HENRY MARTIN PAHLAS, M.D., Elkader, Ia., to Miss Bertha Pings of Denver, Colo., February 28.

EDWARD WATERS GRAY, M.D., Ensley, Ala., to Miss Pearl Belser of Sheffield, Ala., February 20.

WILL AMICK QUIMBY, M.D., to Miss Helen Dunlevy Sprott, both of Bridgeport, O., January 21.

EDMUND LEROY DOW, M.D., to Mrs. Julia Ely Smylie, both of New York City, February 20.

THOMAS B. ALLISON, M.D., to Miss Marie Sober, both of Tarentum, Pa., February 6.

THOMAS J. COBLE, M.D., to Miss Mabel Holt, both of Shelbyville, Tenn., February 15.

JOHN PETERS, M.D., Maywood, Ill., to Miss Lillian Goldberg of Chicago, February 18.

Deaths

John Shaw Billings, M.D. lieutenant-colonel U. S. Army, retired. Curator of the Army Medical Museum and Library for many years, the Index Catalogue of which will stand as a lasting monument to his industry and genius; died in the New York Hospital, March 11, from pneumonia, aged 73.

He was born in Switzerland County, Ind., and was graduated from the Medical College of Ohio, Cincinnati, in 1860. He also has had conferred on him the honorary degree of LL.D. by many universities, at home and abroad; that of M.D. by the University of Munich in 1889 and by Dublin University in 1892 and the degree of D.C.L. by the University of Oxford in 1889.

After serving for a year as demonstrator in anatomy in his alma mater, he entered the United States Army as assistant surgeon, April 16, 1862; was made captain and assistant surgeon four years later; after ten years was promoted to major and surgeon, and June 6, 1894, was made lieutenant-colonel and deputy surgeon-general and was retired from the Army at his own request, after more than thirty years service, Oct. 1, 1895. In 1869 he was ordered to the Surgeon-General's office, Washington, where he had charge of the organization of the Veteran Reserve Corps; of matters pertaining to contract surgeons and of all property and disbursing accounts until 1885, when he was placed in charge of the Library of the Surgeon-General's office, serving in this capacity until 1893, when he was appointed curator of the Army Medical Museum and Library. He was placed in charge of the division of vital and social statistics of the tenth and eleventh censuses. In 1870 Dr. Billings was engaged in the reorganization of the United States Marine Hospital Service and from 1879 to 1882 served as vice-president of the National Board of Health.

His contributions to the medical literature were numerous and varied, the best known being the Index Catalogue of the Library of the Surgeon-General's Office and the National Medical Dictionary. He was professor of hygiene in the University of Pennsylvania and director of its laboratory of hygiene from 1893 to 1896, when he accepted the directorship of the New York Public Library, Astor, Lenox and Tilden Foundations, holding this position until his death.

Dr. Billings survived his co-worker, Dr. Robert Fletcher, by only four months. His work as an administrative officer and as a bibliographer is unique in the history of American medicine.

Philip Hanson Hiss, Jr., M.D. College of Physicians and Surgeons, New York City, 1895; a member of the American Medical Association; National Pathological and Bacteriological Society; Society of Experimental Biology in Medicine; American Public Health Association, etc.; assistant in bacteriology in his alma mater in 1895; instructor in hygiene and bacteriology from 1899 to 1903; adjunct professor of bacteriology from 1903 to 1906 and thereafter professor of bacteriology; professor of hygiene in the Woman's Medical College from 1898 to 1899; bacteriologist of the Health Department of New York City from 1896 to 1899; co-author with Zinsser of a text-book on bacteriology; died at his home in New York, February 27, aged 44.

Thomas H. Doyle, M.D. New York University, New York City, 1865; a member of the American Medical Association; a pioneer physician and formerly police commissioner and mayor of St. Joseph, Mo.; professor emeritus of the principles and the practice of medicine in the Ensworth Medical College, St. Joseph, and president of its board of trustees; died in St. Joseph's Hospital, February 25, shortly after a surgical operation, aged 72. In 1910 Dr. Doyle was the guest of honor at a testimonial banquet given by the medical, dental and pharmaceutical professions of the city, at which a silver loving cup was presented to him.

Evan G. Shortlidge, M.D. University of Pennsylvania, Philadelphia, 1869; a member of the Delaware State Medical Society; for forty years a member of the Board of Education of Wilmington and for eighteen years its president; mayor of Wilmington from 1893 to 1895; died at his home, February 24, aged 68. Out of respect for Dr. Shortlidge the public schools of the city were closed all day on the day of his funeral and flags on all school buildings were at half-staff for the week following his death.

John Anthony Hobson, M.D. Miami Medical College, Cincinnati, 1872; a member of the American Medical Association; of Flushing, Ohio, proprietor of the Flushing Hospital; died suddenly, February 21, from heart disease, while making a professional call in St. Clairsville, Ohio, aged 63.

John Warren Willis, M.D. Harvard Medical School, 1861; a member of the Massachusetts Medical Society; for twenty years treasurer of the Massachusetts South District Medical Society; for more than half a century a practitioner of Waltham and for several years chairman of the board of selectmen; a member of the town school committee and board of aldermen, and city physician; one of the founders of the Waltham Hospital and Nurses' Training School and trustee of the latter institution; died at his home in Waltham, March 1, from pneumonia, aged 80.

Henry F. Livingston, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1865; a member of the South Dakota State Medical Association; one of the oldest practitioners of South Dakota; for twelve years physician and agent to the Sioux Indians at the Crow Creek Agency; afterward a resident of Yankton; for two years assistant superintendent and for a similar period, superintendent of the State Hospital for the Insane and for a number of terms coroner of Yankton County; died at his home in Yankton, February 27, from heart disease, aged 69.

Henry William Brown, M.D. Geneva (N. Y.) Medical College, 1867; a member of the American Medical Association; one of the founders and a member of the staff of the Presbyterian Hospital, Waterloo, Ia., and a pioneer practitioner of that city; a surgeon of volunteers during the Civil War, and for many years local surgeon of the Illinois Central Railroad; died at his home, February 27, from organic heart disease, aged 68.

Azro Delos Bundy, M.D. Eclectic Medical Institute, Cincinnati, 1878; College of Physicians and Surgeons, Keokuk, Ia., 1880; a member of the American Medical Association; a veteran of the Civil War and during the latter part of his service, assistant surgeon of volunteers; for several years a member and chairman of the library board of Osage, Ia.; died at his home, February 21, from cerebral hemorrhage, aged 71.

Thomas Janes Carswell, M.D. University of the South, Sewanne, Tenn., 1908; of Waycross, Ga.; a member of the American Medical Association and secretary of the Eleventh District Medical Association; died in the King's Daughters Hospital, Waycross, February 9, from the effects of burns and injuries received in an automobile accident a few hours before, aged 35.

John Wesley Leonard, M.D. Medical College of Ohio, Cincinnati, 1886; for many years medical examiner for the Burlington System Voluntary Relief Department; for one year resident physician at the Dixmont Insane Hospital, Pittsburgh, Pa.; a practitioner of St. Joseph, Mo., since 1888; died in the French Sanatorium in that city, February 24, aged about 55.

Frederick Charles H. Eggert, M.D. Northwestern University, Chicago, 1898; instructor in operative surgery in his alma mater; a member of the American Medical Association; and chief surgeon of the German Deaconess Hospital; died at his home in Chicago, March 6, from pneumonia, aged 37.

Jesse T. Dunn, M.D. University of Louisville, Ky., 1890; a member of the American Medical Association and one of the early *x*-ray workers of Louisville; died in the Jewish Hospital Louisville, February 28, from pneumonia, aged 45. At a special meeting of the Jefferson County Medical Society resolutions of regret and sympathy were adopted.

Isaac Allen Fetherlof, M.D. College of Physicians and Surgeons, Baltimore, 1877; a member of the Medical Society of the State of Pennsylvania; for twenty-five years a practitioner of Mazeppa, Pa., but for the last two years a resident of West Milton; died at his home, February 16, from malignant disease of the liver, aged 62.

Augustus Van Hoff, Gosweiler, M.D. Jefferson Medical College, 1877; for thirty years a practitioner of Baltimore County, Md., and for ten years resident physician at the Eastern Dispensary, Baltimore; a druggist of New York City since 1905; died in Bellevue Hospital, February 22, shortly after a surgical operation, aged 63.

William Arthur Little, M.D. New York University, New York City, 1878; one of the founders of the Bushwick Hospital, Brooklyn; died at his home in that city, February 24, from heart disease, aged 63.

James W. Eichelberger, M.D. University of Maryland, Baltimore, 1870; a life-long resident of Emmitsburg, Md.; died in the Frederick (Md.) City Hospital, February 23, from nephritis, aged 71.

James Everard Massey, M.D. University of Maryland, Baltimore, 1871; died at his home in Rock Hill, S. C., January 20, aged 64.

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Ferdinand Koeller, M.D. University of Gratz, Austria, 1854; later assistant professor in the eye clinic of his alma mater; formerly a member of the American Medical Association; a surgeon in the war between Austria and Italy in 1859; died at his home in Mount Oliver, Pittsburgh, March 2, from senile debility, aged 79.

Robert W. Musgrave, M.D. California Eclectic Medical College, Los Angeles, 1884; a member of the American Medical Association; a pioneer physician of Kings County, Cal.; formerly county health officer and city physician of Hanford, Cal.; died suddenly at his home, February 15, from heart disease, aged 54.

John Morse Wakefield, M.D. Dartmouth Medical School, Hanover, N. H., 1875; a member of the American Medical Association; once president of the Knox County (Me.) Medical Society; president of the consulting staff of the Knox County Hospital; died suddenly at his home in Warren, February 27, aged 60.

George Fischer, M.D. University of Würzburg, Germany, 1889; a member of the American Medical Association; dermatologist to the Paterson (N. J.) Hospital and a member of the medical staff of the New York German Hospital; died at his home in Paterson, February 22, from pneumonia, aged 48.

John Edgar Ambler, M.D. New York Homeopathic Medical College, New York City, 1893; assistant surgeon to the New York Ophthalmologic Hospital, and formerly on the staff of the Metropolitan Hospital, Blackwell's Island; died at his home in New York City, February 24, from scarlet fever, aged 41.

John Alexius Joseph Mueller, M.D. State University of Iowa, Iowa City, 1892; president of the Dyersville (Ia.) Commercial Club; formerly mayor of New Vienna, Ia.; while driving across the Illinois Central tracks near Dyersville, March 1, was struck by a train and died a few minutes later, aged 41.

John Lee Lehman, M.D. Indiana Eclectic Medical College, Indianapolis, 1887; a member of the Illinois State Medical Society; formerly a member of the board of health of Carmi; died at his home, January 17, from carcinoma of the stomach, aged 60.

Frank C. Molkup, M.D. Chicago Homeopathic Medical College, 1898; Hahnemann Medical College, Chicago, 1905; a member of the Bohemian Medical Society of Chicago; died suddenly from heart disease at his home in Chicago, March 1, aged 42.

John Thomas Faucett, M.D. Vanderbilt University, Nashville, Tenn., 1881; a member of the Tennessee State Medical Association; and president of the Gibson County Board of Health; died at his home in Trenton, February 2, aged 59.

Francis M. McElwee, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1892; a member of the Nebraska State Medical Association; for twenty years physician of Franklin County, Neb.; died at his home in Macon, March 1.

Edward F. Wagner, M.D. Jefferson Medical College, 1884; medical inspector for the Pennsylvania System Relief Union; who was on duty during the Johnstown flood of 1889; died at his home in Fort Wayne, Ind., February 23, aged 52.

Charles B. Holmes, M.D. New York Homeopathic Medical College, 1874; four times mayor of Rahway, and a member of the Rahway Board of Trade; a member of the Medical Society of New Jersey; died at his home March 4, aged 65.

Lyman R. Woodson, M.D. Ensworth Medical College, St. Joseph, Mo., 1898; a newly appointed member of the staff of State Hospital No. 2, St. Joseph; died at his home in Rushville, Mo., February 25, from pneumonia, aged 35.

Edith Barton, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1902; a member of the American Medical Association; of Scranton, Pa.; died at her home, February 20, from heart disease, aged 44.

Saul Brock Angle, M.D. University College of Medicine, Richmond, Va., 1901; of Windsor, Va.; a member of the Medical Society of Virginia; died in St. Andrew's Hospital, Suffolk, Va., February 23, aged 32.

Peyton L. Hurt, M.D. Jefferson Medical College, 1867; formerly president of the Cooper County (Mo.) Medical Society; of Boonville; died in that place, February 24, from heart disease, aged 67.

Russell Clark Bowdish, a charter member of the Marion County (Ohio) Medical Society; died at his home in Marion, February 20, from senile debility, aged 89.

E. W. Bradley, M.D. University of Louisville, Ky., 1874; of Newburg, Tex.; died at Mineral Wells, Tex., February 14, aged 63.

Henry J. Trolinger, M.D. Washington University, St. Louis, 1875; for twenty-five years a practitioner of San Antonio, Tex.; died at his home in that city, February 27, from cerebral hemorrhage, aged 62.

Edgar Pearl Ward, M.D. Marion-Sims Medical College, 1894; professor of embryology and obstetrics in the American Medical College, St. Louis; died at his home in that city, February 22, aged 46.

Perry Wright Falls, M.D. Eclectic Medical Institute, Cincinnati, 1892; formerly surgeon to the Signal Corps, N. G., La.; died at his home in New Orleans, February 24, from influenza, aged 53.

John Baxter Richards (license, Wisconsin, 1881); a practitioner since 1854; health officer of Janesville in 1910; died at his home in that city, January 3, from cerebral hemorrhage, aged 80.

William Augustus Megrath, M.D. Dartmouth Medical School, Hanover, N. H., 1886; a member of the New Hampshire Medical Society; died at his home in Loudon, February 13, aged 54.

Norman Brigham Bayley, M.D. Yale University, New Haven, Conn., 1871; a member of the American Medical Association; died at his home in Haverstraw, N. Y., February 27, aged 65.

Hugh Cross, M.D. University of Southern California, Los Angeles, 1894; a member of the American Medical Association; died at his home in Dunsmuir, Cal., February 23.

Archibald McNiel Bevier, M.D. University of Buffalo, N. Y., 1866; for forty-five years a practitioner of Owasco, N. Y.; died at his home, February 19, from arteriosclerosis, aged 71.

Harold B. Blanchard, M.D. McGill University, Montreal, 1907; a member of the American Medical Association; died at his home in Columbus, N. Dak., February 19, aged 29.

Thomas F. Montgomery, M.D. Rush Medical College, 1863; for nearly half a century a practitioner of Gibson County, Ind.; died at his home in Owensville, February 21, aged 73.

Charles M. Barkley, M.D. University of Louisville, Ky., 1883; a member of the Kentucky State Medical Association; died at his home in Leesburg, February 25, from pneumonia.

George Mark Silverberg, M.D. New York University, New York City, 1893; formerly of Chicago; died at his home in Los Angeles, February 22, from heart disease, aged 52.

Hiram Dana Walker, M.D. University of Buffalo, N. Y., 1864; a member of the American Medical Association; died at his home in Buffalo, February 21, aged 73.

James Crozier, M.D. Rush Medical College, 1882; of Glenwood, Minn.; a veteran of the Fenian Raid in Canada in 1866; died in Glenwood, about February 27.

Daniel L. Campbell, M.D. Saginaw Valley Medical College, Saginaw, Mich., 1899; of Tacoma, Wash.; died at his home, January 20, from nephritis, aged 37.

Alexander Mansfield Goodman, M.D. New York University, New York City, 1876; died at his home in Brooklyn, N. Y., February 19, from uremia, aged 59.

George W. V. Hickman, M.D. Georgetown University, Washington, D. C., 1872; of Smithville, Tex.; died in Washington, D. C., about February 8, aged 59.

David Shewman Watson, M.D. Pulte Medical College, Cincinnati, 1905; died at his home in Fredericktown, O., February 13, from pneumonia, aged 36.

Rogers Wright Miller, M.D. Bellevue Hospital Medical College, 1870; died at his home in Castile, N. Y., February 22, from heart disease, aged 68.

Amalia Hesse, M.D. American Medical College, Eclectic, St. Louis, 1892; died at her home in St. Louis, February 26, from heart disease, aged 68.

John G. Calder, M.D. Manitoba Medical College, Winnipeg, 1889; of Medicine Hat, Man.; died in December, 1912, while en route to California.

Robert Hamilton Miller, M.D. Jefferson Medical College, 1896; died suddenly at his home in Santa Fe, N. Mex., February 19, aged 38.

Alpheus B. Woodruff, M.D. University of Pennsylvania, Philadelphia, 1874; died at his home in Elmer, N. J., January 18, aged 62.

Delmo Merton Bigelow, M.D. Detroit (Mich.) Homeopathic Medical College, 1904; died at his home in Detroit, February 24, aged 38.

Thomas Henry McNally, M.D. University of Vermont, Burlington, 1886; died at his home in Central Falls, R. I., January 24.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ANOTHER GET-RICH-QUICK SCHEME

In the absence of much-needed "blue-sky" laws in most of the states, the industrious and conscienceless promoter of wonderful get-rich-quick schemes still flourishes. Physicians are sometimes easy victims of such promoters, probably on account of carelessness, good nature or lack of time to investigate. A physician sends us a prospectus of a proposed combination sanatorium and nostrum factory which arouses speculation as to the sort of physicians who would attach their names to it; the scheme is so preposterous in outline that a mere reading should make warning unnecessary.

The Sanitarium Company of Sioux City, Iowa, the directors of which are Dr. S. W. Staads, president, Dr. S. B. Hoskins, vice-president, and Dr. F. A. Seemann, secretary, makes half a dozen secret homeopathic nostrums. It now proposes to combine with a sanatorium in a neighboring city and run the combination as a money-making venture on which they promise at the outset 22.5 per cent. returns, with unlimited possibilities for future profits. The circular is addressed to "Dear Reverend," but it has been largely circulated among physicians.

AN INCLUSIVE SCHEME

It is explained that "the object of our company is to manufacture and sell medicines for humankind and animals, chemicals, pharmaceuticals, infant and invalid foods, health coffees, to build and maintain a sanatorium, etc.," which seems rather inclusive. A building for the sanatorium is to be purchased for about thirty thousand dollars. The sanatorium portion of the scheme is to be capitalized at five hundred thousand dollars, with thirty thousand shares of preferred and twenty thousand shares of common stock. Eight per cent. "cumulative dividends" are to be paid on the preferred stock, and it is asserted that the dividends on the common stock may easily amount to "20, 50 or more per cent." By way of encouraging prospective investors in the stock the promoters cite a number of well-known industrial or public utility stocks that are said to have increased from a value of $100 per share to $4,000, $48,000, $36,000, $50,000, $127,000 and $400,000, and call attention to the money-making qualities of a much-advertised talcum powder, Coca Cola, Post's Battle Creek breakfast foods, etc.

EXPLOITING THE "MADE IN GERMANY" BRAND

As a further inducement it is said that a contract has been entered into with a famous German factory with the "right to use their name and trademarks and to manufacture all of their products such as medicines, chemicals, foods, etc., which have a tremendous sale in Europe." It is also asserted that "when thoroughly established in the United States through wide advertising to the physicians, druggists and the laity, we will gradually have to open branches in Canada, Mexico, Cuba, etc.," to which the promoters claim their concession extends, and then they go on to say: "Have you any conception of the wonderful possibilities of such work? Just think what it means to have thousands of physicians and druggists as shareholders, as we intend to get! All shareholders are entitled to 10 per cent. discount for cash on any direct purchase of our goods not marked net, and on bills incurred at the proposed sanatorium. . . . Further, every shareholder, minister and layman (and we have a good number of them now and add as fast as we can) will gladly recommend such of our medicines to his friends which he has found to be reliable, for which purpose we intend to supply free each one with our preparations according to the holding they have with us. Think what it means to have thousands of friends in all parts of the country! That does not mean that our shareholders must be 'boosters' for us, but they will gladly say a good word for us where opportunity presents itself." The profits of the proposed sanatorium are then figured out on the basis of one patient at least from each of five hundred physician shareholders at so much per week, and the plan of letting the investor in on the ground floor for one hundred shares only (for each member of the family) of the preferred stock at ten dollars a share, with 2.5 per cent. discount and one share of common stock as a bonus, is set forth in glowing terms.

GETTING A STRING OF SUCKERS

The three worthy homeopathic physician promoters of the scheme give their official status and unimpeachable references to banks and trust companies, and wind up by suggesting that if the recipient cannot take up the proposition perhaps he can hand it to some member of his congregation who might be interested, or perhaps he could furnish a list of his parishioners, for which they will send him fifty cents' worth of their medicines for each twenty-five names. This would seem to be a rather lame conclusion to a glowing prospectus which deals in hundreds of thousands of dollars in stocks with tremendous dividends from a vast business extending over a continent. It is to wonder how many physicians or "Dear Reverends" would really invest good money in such a crudely and baldly exploited scheme.

THE PREPARATIONS OF LLOYD BROTHERS

The following inquiry comes from Dr. A. C. Ames, Mountain Grove, Mo.:

"I receive considerable literature from Lloyd Brothers, Cincinnati, but I do not find any of their preparations in New and Nonofficial Remedies. Are their preparations not recognized? If not, why? Is it because of the way they are advertised or because they do not come up to the claims made for them? I do not want to pass a good thing by or waste my time trying what more competent men have cast aside as useless."

None of the products of the firm has been accepted for inclusion with New and Nonofficial Remedies nor has any been considered by the Council. On the one hand, Lloyd Brothers have not submitted their preparations; on the other hand, the Council has not considered them of sufficient importance to take them up on its own initiative. While some of this firm's products appear to be proprietaries of secret composition, in the main they are the so-called "specific tinctures" or "specific medicines." In general, it is understood that these preparations belong to that class of obsolete pharmaceuticals known as "green tinctures," which at one time were believed to possess great virtues because they were made from the fresh, undried drug. The manufacturers' statements as to the character of their "specific" medicines, however, are most indefinite and vague. Thus an advertising booklet contains the following in reference to the "drug strength" of specific medicines:

"The drug strength is on every Specific Medicine label. This drug strength refers to the balanced structural parts of the drug that experience has demonstrated are best adapted to produce the fullest and kindliest drug action. In some cases the green drug is employed, in others the dry drug, and again a drug that is partly dried. In a few cases a drug is better if aged than when recent."

The use of so-called "green tinctures" has been a fad and has never been put on a scientific basis. In connection with the firm's claims for the superiority of its products, the following from a review of a paper by Edmunds and Hale[1] on digitalis and its standardization is illuminating:

"Lloyd's 'Specific Medicine, Digitalis,' gave very interesting results, especially when compared with the claims made by this firm. It was assayed by seven methods—in one table it appears at the bottom of the list; in four it stands last but one, and in the other two it is third from the bottom. Its comparative

1. Edmunds, C. W., and Hale, Worth: The Physiologic Standardization of Digitalis, Hyg. Lab. Bull. 48; abstr., Pharmacology Department, THE JOURNAL A. M. A., June 12, 1909, p. 1938.

weakness is thus very clearly shown when it is compared with U. S. P. fluidextracts, and yet, according to Lloyd Brothers' advertising literature, 'Specific Medicines' have about double the effect on the system that is possessed by ordinary (non-proprietary?) fluidextracts. The dose recommended is from ½ to 1 minim every hour, which the writers point out is certainly not less than that of a pharmacopeial fluidextract."

IOSALINE

Report of the Council on Pharmacy and Chemistry

Iosaline is a rheumatism remedy for external application. In view of the misleading and unwarranted claims which are made for it, the Council voted that Iosaline be refused recognition and recommended publication of the Committee's report which appears below. W. A. PUCKNER, Secretary.

COMMITTEE'S REPORT

The following sweeping but rather indefinite claims are made for Iosaline.

"Iosaline is a penetrator and overcomes the objectionable escharotic properties of Iodine; it is readily absorbed and may be used without discomfort or discoloration."

"The strong analgesic properties of Iosaline make it especially useful in controlling pain in cases of Neuralgia, Rheumatism, Gout, and Arthritis Deformans."

As there are few, if any, known iodin compounds which are "readily absorbed" through the skin and which will not at the same time produce discoloration or discomfort, it was thought worth while to take up the examination of Iosaline. The results of this examination are reported by the Chemical Laboratory of the Association as follows:

Laboratory Report:—Iosaline is advertised by the Iosaline Company of New York, as a remedy for the treatment by external application, of rheumatism, gout, neuralgia, pneumonia and numerous other diseases. Concerning its composition the following statements are made:

"A transparent, non-staining gelatinoid of combined iodine with menthol and methyl salicylate.
"Alcohol 070. per cent.
"Chemical tests demonstrate the preparation to contain 5 per cent. of iodine."

The placing of a cipher before the percentage figure for alcohol, though perhaps accidental and not meant to mislead, might cause a hasty or careless reader to understand 7 per cent. or .07 per cent., instead of 70 per cent., as the proportion of alcohol present.

The preparation examined was a very pale yellowish, translucent solid having a strong odor of methyl salicylate and a fainter odor of menthol. A package sold for 2 ounces contained 51.7 gm. Qualitative tests indicated the presence of alcohol, an iodid, menthol, methyl salicylate, potassium, sodium, combined fatty acids and a trace of glycerin. Thyroid extract was not found. Quantitative examination indicated the following approximate composition for Iosaline:

Alcohol (by weight)	48.05 per cent.
Menthol	2.07 per cent.
Methyl salicylate	10.25 per cent
Potassium iodid (4.25 per cent. iodin)	5.55 per cent.
Soap	12.68 per cent.
Glycerin	a trace
Water and undetermined matter to make	100.00 per cent.

Iosaline, therefore, appears to be a solidified, watery-alcoholic solution of soap containing potassium iodid, menthol and methyl salicylate. Physiologic tests carried out by rubbing the preparation on the skin and afterward testing the saliva and the urine for an iodid indicated that none of the potassium iodid is absorbed. Since Iosaline is claimed to contain 70 per cent. of alcohol and 5 per cent. of iodin, the alcohol content is but 68.7 per cent. and the iodin content but 85 per cent. of the amounts claimed. The phrase "combined iodin" is evidently meant to mislead, and adds the element of mystery on which preparations of this class rely so largely.

PHYLACOGENS—THE "PERSONAL ANIMOSITY" PLEA

To the Editor:—I was called on recently by one of Parke, Davis & Co.'s agents, in the interest of Phylacogens. He asked if I desired to be supplied with the literature concerning the Phylacogens. I declined, telling him that I preferred to get my information from THE JOURNAL of the American Medical Association. He was evidently loaded from headquarters with quite a "spiel" against THE JOURNAL. His claim was that the editor had had some personal misunderstanding with P., D. & Co. some years ago, and that the position of THE JOURNAL was wholly a matter of spite, on the part of the editor.

I am not aware that this claim has been made in any of the Phylacogen printed matter, but it was quite evident that this particular person has his speech well prepared. I imagine this argument will only be effective, if at all, with physicians who are unfamiliar with THE JOURNAL and its splendid work in fighting "patent-medicine" frauds.

J. E. MILLER, M.D., Rogersville, Tenn.

To the Editor:—Some time ago a representative of Parke, Davis & Company tried to interest me in Phylacogens. He succeeded in interesting me, but not favorably. He explained the attitude of THE JOURNAL of the American Medical Association by saying that you have been unfair to Parke, Davis & Company ever since your treatment of Taka-Diastase several years ago. He claimed that when you find Parke, Davis & Company at fault you make a great to-do about it but that when some of your favorites are caught you do not name them but speak of them as "a prominent drug house."

H. M. FRANCIS, M.D., Woodstock, Ill.

These letters are typical of many we have received from different parts of the country, showing that Parke, Davis & Co.'s detail men have "learned their little piece" and are reciting it with regularity and despatch. What the firm itself has to say on this point may be gathered from two quotations from letters sent out by Parke, Davis & Co. These particular letters were signed by E. G. Swift, general manager:

". . . The real motive and animus of the attack are to be sought in the determination of Doctor Simmons to dragoon Parke, Davis & Co. into submission to the Council on Pharmacy and Chemistry of the A. M. A."

And this:

"The editor of THE JOURNAL, looking on the Council as his creature, has resolved to dragoon us into submission—to compel us to bend our neck to the yoke and introduce no specialty to the medical profession without the knowledge and permission of his Council."

The "personal animosity" argument has been used by most of the "patent-medicine" fakers whose frauds we have exposed and by not a few of the "ethical proprietary" manufacturers whose products we have had to criticize. This plea that personal malice actuates the exposures of pharmaceutical frauds has become wofully threadbare. It was only four or five years ago that some other manufacturers of "ethical proprietaries" whose products had come in for severe criticism were accusing the editor of THE JOURNAL of being hand in glove with Parke, Davis & Company! "So runs the world away."

Correspondence

A Personal Impression of Dr. Friedmann

To the Editor:—Everything of importance connected with Dr. Friedman's alleged "cure" for tuberculosis, has been fully set forth in THE JOURNAL. But for the fact that the many newspaper reports are confusing to some doctors as well as to the public, I would not write this letter.

I have just returned from Europe where I spent two months. I was alert to learn all I could about Dr. Friedmann and his remedy. I questioned both German and American medical men as to what they had seen or heard from others. I visited the doctor's office; I crossed on the same vessel with him and talked with him, his assistant, Dr. Benjamin and his press-

agent, Mr. Hundt; I saw some of his patients at his office and met others and their friends at their hotels.

What evidence is there to support Dr. Friedmann's claims? Dr. Friedmann has publicly declared that no one but himself knows what his remedy is; he has given it to no one, and hence all evidence must come from him. His only published report must be regarded as entirely inadequate. In fact, all his reports are indefinite. He gives varying accounts of the number of cases treated. The statements as to the character of cases and the percentage of cures are equally indefinite. He showed me ten patients at his office, the first a boy claimed to be cured of tuberculosis of the bones of the hand, and the second claimed to be cured of a similar affection of the knee. Instead of showing me a record he had the mothers detail to me the histories, how they had applied to others without relief and finally were cured by Dr. Friedmann. These patients had been well a year and a half, and as the same patients were exhibited to other physicians at different times during the preceding month, I am sure they were "show cases," for there was no necessity for frequent visits to the clinic for cured cases. The other patients gave no evidence of special improvement. Most of them said they were no better, nor were any whom I visited in their hotels. Dr. Friedmann says that whenever the exudate which forms at the site of the injection begins to be absorbed, the patient always improves. I saw five patients in whom this was not the case.

I was struck with the superficial examinations and meager histories kept. I would not have mentioned this had it not been corroborated by a number of physicians, patients and friends who had made many visits to his office. In short, I did not see, nor could I hear of anything to indicate that Dr. Friedmann's patients were doing even so well as those with similar cases under ordinary treatment. He had not instructed any of those with whom I talked how to live, and I found all in unsuitable surroundings and doing the best they could with the knowledge they had received before.

It is hard for me to express in calm language the impressions Dr. Friedmann, his clinic, and his method made on me. Dr. Friedmann has made great claims, but he has failed to submit them to any efficient test. The evidence of his own results, taken even as he gives it, falls far short. His conduct of secrecy as far as the profession is concerned, his appeal to the public press, his spectacular gift of his discovery to men of prominence, his trip to America with a press-agent, in short, his whole attitude have been such as to excite distrust.

EDWIN WALKER, M.D., Evansville, Ind.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DENATURED ALCOHOL

To the Editor:—Please give the following information concerning denatured alcohol:

1. What substance is added to the alcohol and in what quantity?
2. Is this substance poisonous? If so, what quantity might be expected to produce poisoning? What would be the symptoms and treatment of such poisoning?
3. Does the addition of this substance alter the dissolving power of the alcohol?
4. What are the incompatibilities of this substance?
5. Is denatured alcohol suitable for internal administration or for making alcoholic preparations to be taken internally?

L. W. JOHNSON, P. A. Surg., U. S. Navy, Baltimore.

ANSWER.—1. Denatured alcohol or tax-free alcohol is alcohol rendered unfit for use as a beverage or as a medicine by the introduction of some denaturing substance. Among the formulas approved by the government for this purpose the following are the most generally used: A. To every 100 gallons ethyl alcohol (of not less than 180 degrees proof) there shall be added 10 gallons of approved methyl alcohol and one-half gallon approved benzin. B. To every 100 gallons of ethyl alcohol (of not less than 180 degrees proof) there shall be added 2 gallons of approved methyl alcohol and one-half gallon of approved pyridin bases.

2. The methyl alcohol that is used in both of the general formulas is decidedly poisonous. The other substances are also poisonous, although not so likely to produce serious symptoms as the methyl alcohol. The amounts of methyl alcohol causing poisoning are naturally often not known and seldom reported exactly. "A wineglassful," "half a pint," "about four ounces" are amounts reported as having caused death or blindness. In cases of poisoning by inhalation or absorption through the skin the amounts of course cannot be known. Idiosyncrasy seems to play a large part in methyl-alcohol poisoning, some persons being largely immune from permanent effects. When commercial methyl alcohol is used to denature alcohol, its unpleasant odor serves as a deterrent to poisoning. (See Wood, C. A.: Death and Blindness from Methyl- or Wood-Alcohol Poisoning, with Means of Prevention, THE JOURNAL, Nov. 30, 1912, p. 1962). The principal symptoms in case of methyl-alcohol poisoning have been the condition of intoxication similar to that produced by ethyl alcohol, accompanied by severe headache, nausea and vomiting, sweating, dilatation of the pupils, delirium and coma. Partial or total blindness has occurred in a large percentage of severe cases. The treatment of methyl-alcohol poisoning consists chiefly in the use of the stomach-pump and rectal injections for getting rid of the poison; heat applied to the body, especially the extremities, and internal stimulants, such as strychnin and coffee. An instance of poisoning from alcohol denatured with formaldehyd, due to an idiosyncrasy to the latter substance, is reported by Morgan (THE JOURNAL, Feb. 22, 1913, p. 590).

3. As the substance used for denaturing alcohol varies in different cases, it would be impracticable to consider the possible effects on the solvent power of the alcohol. As a rule, the substances added are solvents of the same general nature as ethyl alcohol itself.

4. As denatured alcohol is not used for medicinal purposes, there is little need to discuss this question.

5. No.

PHOSPHORUS MATCHES UNDER THE HUGHES-ESCH BILL

To the Editor:—I have been somewhat interested in phosphorus poisoning and in the proposal to tax ordinary phosphorus matches out of existence, and I would like to learn something about the new phosphorus matches that are to take the place of the old, common phosphorus matches. How much, if any, of yellow phosphorus will they contain? D. H. P.

ANSWER.—The Hughes-Esch bill, by excessive taxation, will legislate the poisonous white phosphorus match out of existence in this country. The effect of this federal measure will be that no white phosphorus matches will be manufactured in the United States after June 30, 1913. A substitute, sesquisulphid of phosphorus, which is compounded from the non-poisonous red amorphous phosphorus, will take the place of the poisonous white or yellow phosphorus as a prime combustible in the manufacture of matches.

RATTLESNAKE VENOM IN EPILEPSY

To the Editor:—The *Literary Digest*, Jan. 18, 1913, p. 128, cites an article in the *Technical World Magazine* (Chicago) concerning the treatment of epilepsy by injections of rattlesnake venom as carried on by Dr. Ralph H. Spangler. Can you tell me anything about this matter? Dr. Spangler's address is not given in the *Digest*, and I do not find his name listed in the directory under Chicago.

JAMES V. FREEMAN, M.D., Jacksonville, Fla.

ANSWER.—The letter given above is one of a large number received regarding this treatment. These inquiries, many of which are from laymen, afford an illustration of the influence of sensational exaggeration of scientific work by the lay press, the effect of which must be to arouse the expectations (in most cases fruitlessly) of patients afflicted with a practically hopeless disease.

A few years ago rattlesnake venom was being used in the treatment of respiratory diseases and had a very enthusiastic advocate in Dr. Thomas J. Mays of Philadelphia. Dr. Mays used the preparation in the treatment of tuberculosis. He had for an assistant Dr. R. H. Spangler who, later, began using the same material in the treatment of epilepsy. Newspaper articles followed the reading of some of Dr. Spangler's papers. According to our understanding, Dr. Spangler does not assert that rattlesnake venom will cure epilepsy; he emphasizes the fact that its utility in epilepsy is practically confined to the idiopathic form in which no serious brain changes have occurred; that is to say, the initial stages of the disease. In properly selected cases, however, he asserts that it does alleviate the

symptoms and that, in some cases, there is a cessation in the attacks for periods which encourage further investigation.

The remittent or intermittent course that epilepsy frequently pursues makes it necessary in judging any form of treatment to allow a sufficient time to elapse before arriving at any conclusion as to its value. The venom treatment of epilepsy has not been used for a sufficient length of time to determine its true value. The dried venom can be obtained from A. M. Nicholson, Orlando, Fla., and the solution prepared so that a dose of 1/200 grain (not gram) will be contained in 5 or 10 drops. The venom is dissolved in sterilized water, and 0.4 per cent. trikresol is added for preservative purposes. Under the circumstances, however, we advise physicians to wait for further information before resorting to this treatment.

HOOKWORM ERADICATION

To the Editor:—Will you give me information in regard to the plan and methods of the Rockefeller Sanitary Commission for the Eradication of Hookworm? How does the commission cooperate with the state boards of health? Are certain physicians appointed by the governors of the states to make investigations for hookworm in the schools, etc., and does the Rockefeller commission pay the expenses? Where may I obtain literature in regard to hookworm and the methods adopted for its eradication?

C. D. S., Oklahoma.

ANSWER.—The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease was organized in October, 1909. Wickliffe Rose, 725 Southern Building, Washington, D. C., is administrative secretary, and Dr. C. W. Stiles, Twenty-Fifth and E Streets, N. W., Washington, D. C., is scientific secretary. The objects of the commission were to determine the area and the degree of infection with hookworm, to treat the sufferers and to remove the source of infection by putting a stop to soil pollution. The state was adopted as the unit in the organization, and cooperation with the existing health organizations was established. The commission and the state boards of health jointly appoint a state director of sanitation, who organizes and directs the work in the state. A field force of sanitary inspectors and a laboratory force is also provided, and these in cooperation with local health boards and individual physicians and citizens constitute the organization. In addition to making the sanitary survey and treating patients, one of the chief objects of the hookworm fight is to educate the people in prevention; this is accomplished by enlisting physicians in the work, by articles in the newspapers, by distributing bulletins and letters, by lectures, by personal visits and by demonstrations. One effective means of reaching a large number of people, both for treatment and for their education in sanitation, is through the establishment of local temporary dispensaries. The newspapers, of course, are enlisted in distributing information about the disease and in urging the people to take treatment and observe sanitary regulations. The expense is borne jointly by the Rockefeller commission, the states and the counties. The second annual report of the commission shows that nine states expended during the year 1911 a total of $30,000 and the commission about $130,000 for salaries, equipment and expenses; in addition, the latter spent about $18,000 for administrative expenses. The second annual report of the commission contains a complete list of publications of the United States Public Health Service and of the commission on the subject of hookworm, all of which may be had on application. A number of states also publish valuable pamphlets on the disease in the form of reports of the state boards of health. Among these states are Florida, North and South Carolina and Kentucky.

LITERATURE ON ELECTRIC SHOCK

To the Editor:—Please tell me where I can obtain literature pertaining to electric shock or death caused by electric shock.

C. A. HAINES, M.D., Sayre, Pa.

ANSWER.—The following are some articles on this subject:

Jellinek, S.: Pathology and Therapy of Electric Accidents, *Wien. klin. Wchnschr.*, Dec. 10, 1909; abstr. in THE JOURNAL, Jan. 23, 1909, p. 358.
Jellinek, S.: Electric Accidents, *Wien. klin. Wchnschr.*, Dec. 15, 1910.
Jellinek, S.: Treatment of Electric Accidents, *Wien. klin. Wchnschr.*, Feb. 21, 1909, abstr. in THE JOURNAL, April 3, 1909, p. 1150.
Jellinek, S.: First Aid in Electric Accidents, *Wien. klin. Wchnschr.*, Feb. 10, 1910, abstr. in THE JOURNAL, March 19, 1910, p. 1017.
Spitzka, E. A.: Resuscitation of Persons Shocked by Electricity, *Jour. Med. Soc. New Jersey*, April, 1909.
Stanton and Krida: Cause of Death by Commercial Electric Currents and the Treatment, *New York State Jour. Med.*, September, 1910.
Moorhead, J. J.: Injury by Electricity, THE JOURNAL, April 2, 1910, p. 1127.
Robinovitch, L. G.: Electric Analgesia and Electric Resuscitation, After Heart Failure Under Chloroform or Electrocution, THE JOURNAL, Feb. 18, 1911, p. 478.
Oliver, T.: Pathology and Treatment of Injuries Caused by Electricity, *Lancet*, London, Feb. 11, 1911.
Preliminary Work of the Resuscitation Commission, *Electrical World*, March 2, 1912.
Martin, T. C.: Resuscitation from Electric Shock, *Scient. Am.*, July 20, 1912.
First Aid for One Shocked by Electricity, *Texas State Bd. of Health Bull.*, October, 1912.

INSANITY AND SYPHILIS

To the Editor:—1. Can you refer me to a work that treats of insanity from a criminal and legal point of view, and the legal points necessary to prove a person insane? Also some authoritative work that treats of the mental symptoms of congenital syphilis and their relation to insanity?

2. Have you any statistics that show the percentage of Indians that have either congenital or acquired syphilis?

3. Could a Wassermann reaction show positive in a young man free from acquired syphilis, provided either of his parents had syphilis before their marriage?

H. A. SHARPE, M.D., L'Anse, Mich.

ANSWER.—1. The following will give the information required:

Witthaus and Becker: Medical Jurisprudence and Toxicology, William Wood & Co., 51 Fifth Avenue, New York, four volumes, price for each volume, $6. The third volume treats of this subject.
Peterson and Haines, Legal Medicine and Toxicology, W. B. Saunders Co., West Washington Square, Philadelphia, two volumes, price per volume, net, $5.
Hutchinson's Syphilis, chapter on Nervous and Mental Symptoms of Internal Syphilis, Funk & Wagnalls Co., 44-60 East Twenty-Third Street, New York, price $3.
Church and Peterson: Nervous and Mental Diseases, W. B. Saunders Co., West Washington Square, Philadelphia, price $5.

2. We do not find any such statistics.

3. The question is vague. The Wassermann reaction may be positive in case of congenital syphilis, but is not necessarily so.

SECOND EDITION OF NOSTRUMS AND QUACKERY

To the Editor:—1. What is Gallol? I do not find it in "Nostrums and Quackery." 2. Is it not time for Volume II of that work?

C. HEDGER, M.D., Chicago.

ANSWER.—1. Gallol belongs to the prescription fake type of nostrum. We do not know its composition, and the expense of analyzing it would hardly be justified in view of the fact that frauds of this kind have but a meteoric existence. Prescription fake nostrums in general were discussed in THE JOURNAL, Dec. 11, 1909, p. 2019, and in "Nostrums and Quackery," Edition 2, page 628.

2. The second edition of "Nostrums and Quackery" has recently been issued. It contains practically all of the matter in the first edition—brought up to date—and a large amount of additional matter, making it a volume of over 700 pages with over 300 illustrations. The new edition is bound in green cloth, stamped in gold, and sells for $1.50.

METHOD OF COMPOUNDING ACNE PRESCRIPTION

To the Editor:—Page 585, issue of Feb. 22, 1913. Prescription for acne. Gave to patient. Say, you should *see* the mixture.

W. L. MILNER, M.D., Cincinnati.

ANSWER.—With proper manipulations a very satisfactory mixture may be prepared. The sulphurated potash should be dissolved in a portion of the water and this solution added to the zinc sulphate also dissolved in water. This will produce zinc sulphid in a finely divided condition. To the sulphur contained in a mortar, this suspension of zinc sulphid may then be added gradually and with constant trituration. Thus a mixture will be obtained which readily becomes homogeneous when shaken. We have sent our correspondent a specimen of the mixture made in our chemical laboratory.

TUBERCULIN BY MOUTH IS OF DOUBTFUL VALUE

To the Editor:—Can as favorable results be obtained by the administration of tuberculin by the mouth as by the subcutaneous method?

M. L. STEVENSON, M.D., Covington, La.

ANSWER.—The administration of tuberculin by the mouth gives too uncertain results to make it advisable. According to New and Nonofficial Remedies, 1912, p. 217, "Tuberculin pills or capsules for stomach ingestion and suppositories per rectum are too uncertain of absorption to warrant any recommendation."

THE BUSINESS SIDE OF MEDICINE

To the Editor:—Please give references to articles appearing in THE JOURNAL within the past three years on the business side of medicine, fees and contract practice. V. D. L.

ANSWER.—The following will prove of interest in connection with these subjects:

The Cheerful Reception Room, Medical Economics Department, THE JOURNAL, Feb. 26, 1910, p. 725.

Club Practice and State Insurance in Great Britain, Germany, Austria and France, Medical Economics Department, THE JOURNAL, Feb. 26, 1910, p. 725.

Langworthy, H. G.: A Practical Business Bureau for County Societies, Medical Economics Department, THE JOURNAL, Oct. 15, 1910, p. 1406.

Division of Fees, Queries and Minor Notes Department, THE JOURNAL, Dec. 18, 1909, p. 2117.

The Evils of the Contract System: Report of the Committee Appointed by the Erie County Medical Society to Investigate Unethical Contract Practice, Medical Economics Department, THE JOURNAL, Aug. 19, 1911, p. 674.

Nutt, G. D.: Medical Profession To-Day and Business End of It, *Penn. Med. Jour.*, August, 1911; abstr. THE JOURNAL, Sept. 16, 1911, p. 1069.

Substitutes for Physicians Absent on Vacations, Berlin Letter, THE JOURNAL, Nov. 16, 1912, p. 1608.

Haughey, W. H.: Proposed Solution for Certain Phases of Contract Practice, *Jour. Mich. State Med. Soc.*, January, 1911; abstr. THE JOURNAL, Jan. 21, 1911, p. 225.

Lord, J. P.: The Secret Commission Evil, THE JOURNAL, March 11, 1911, p. 725.

The Secret Commission Evil, editorial, THE JOURNAL, March 11, 1911, p. 748.

The Secret Commission Evil, editorial, *Colorado Med.*, February, 1911; reproduced in THE JOURNAL, March 11, 1911, p. 770.

The Secret Commission Evil, Correspondence, THE JOURNAL, March 25, 1911, p. 916, April 1, 1911, p. 987.

Haase, Charles: Financial Problems, THE JOURNAL, April 8, 1911, p. 1053.

Discreditable Remuneration in Contract Practice, Berlin Letter, THE JOURNAL, Dec. 14, 1912, p. 2169.

Conference on Contract Practice, Berlin Letter, THE JOURNAL, Dec. 28, 1912, p. 2324.

Skeel, R. E.: Ethics of Contract Medical Practice and Its Economic Advantage to the Community, *Cleveland Med. Jour.*, November, 1911; abstr., THE JOURNAL, Jan. 6, 1912, p. 65.

Tuckerman, J. E.: Economic Effect of Contract Medical Practice on Medical Profession, *Cleveland Med. Jour.*, November, 1911; abstr., THE JOURNAL, Jan. 6, 1912, p. 65.

Hamann, C. A.: Condition and Control of Contract Medical Practice in Other Cities of the Country, *Cleveland Med. Jour.*, November, 1911; abstr., THE JOURNAL, Jan. 6, 1912, p. 66.

"DISTURBANCES OF THE HEART" TO BE BOUND IN BOOK FORM

To the Editor:—I have read the articles you are publishing on "Disturbances of the Heart" with much interest and, I think, profit. If these were combined in cheaply bound form, I believe that they would find ready sale and be a valuable addition to one's library.

H. W. WATEROUS, M.D., Galva, Ill.

To the Editor:—Please let me know if the articles published in THE JOURNAL under the head of Therapeutics, on "Disturbances of the Heart," are to be put out in pamphlet form. If they are not, I shall have to save my copies of THE JOURNAL, as I think the articles well worth keeping.

GEORGE E. LYON, M.D., St. Louis, Mo.

ANSWER.—These represent the sentiment of many letters received. The series of articles will be issued in book form as a companion book to the "Handbook of Therapy."

SANITATION IN THE CANAL ZONE

Dr. F. W. Thomas, Claremont, Cal.: Articles by Colonel Gorgas, chief sanitary officer of the Canal Zone, have appeared in THE JOURNAL as follows:

Sanitation of the Tropics with Special Reference to Malaria and Yellow Fever, THE JOURNAL, April 3, 1909, p. 1075.

Sanitation at Panama, THE JOURNAL, March 30, 1912, p. 997.

Part Sanitation is Playing in the Construction of Panama Canal, THE JOURNAL, Aug. 31, 1909, p. 687.

Conquest of the Tropics for the White Race, THE JOURNAL, June 19, 1909, p. 1967.

HOW MANY PHYSICIANS GRADUATE, QUALIFY AND DIE ANNUALLY?

To the Editor:—Please tell me:

1. The average number of graduates the medical colleges of the United States turn out annually.
2. The percentage of those who do not secure licenses after graduating.
3. The number of practitioners that die annually.
4. The average income of physicians in the United States.

E. T. C.

ANSWER.—1. About 4,900 each year on the average for the last ten years. This question is answered at length with detailed discussion and elaborate tabulation of the facts in the annual Educational Number of THE JOURNAL, the last having been issued Aug. 24, 1912. A copy of this issue will be sent on receipt of 15 cents in stamps.

2. Data are not available to give more than an approximate answer. Information collected indicates that of the graduates of 1908, about 7 per cent. have not yet passed a state board; of the graduates of 1909, 8 per cent.; of the graduates of 1910, 9.5 per cent. and of the graduates of 1911, about 15 per cent. The actual number would probably not exceed 5 per cent. These data are given in detail in the annual State Board Number of THE JOURNAL; the last one was issued May 25, 1912. A copy of this will be sent on receipt of 15c in stamps.

3. About 2,100, taking the average of the past ten years. There is an editorial on this subject, giving additional details, in the first issue of THE JOURNAL each year.

4. Various estimates are from $1,000 to $1,400, but we place no dependence on these estimates. There are no sufficient data available on which to do anything more than to guess. We discussed this point in THE JOURNAL, Nov. 2, 1912, p. 1641.

TECHNIC OF THE LUETIN TEST

Dr. A. A. Herold, Shreveport, La.: The luetin test is made like any other vaccination test on the skin. Details are given in the article by Dr. H. Noguchi, THE JOURNAL, Oct. 5, 1912, p. 1262.

NOTEWORTHY FECUNDITY

To the Editor:—On February 20, at 1 a. m., I delivered Mrs. Y. of a child at term and fully developed. She is 30 years old. This was her eighth confinement. Her previous confinement was May 1, 1912, at 2 p. m. Period between is nine months, eighteen days and eleven hours. This appears to be a case of noteworthy fecundity. F. F. MENDENHALL, M.D., Elmwood, Ind.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

LEGISLATIVE DEVELOPMENTS

The number of bills on public health subjects introduced this year is greater than ever before. It is possible to mention only a few of the most important developments of the last two weeks.

ARIZONA

H. B. 18 regulates the practice of medicine, providing for a board of two "regulars," one homeopath, one eclectic and one osteopath, which board shall have power to issue three forms of certificates, one authorizing the practice of medicine and surgery, one authorizing the practice of osteopathy and one authorizing any other system of treating the sick. In addition to the presentation of diplomas, all applicants must pass an examination in anatomy, histology, gynecology, pathology, bacteriology, chemistry, physiology, obstetrics, diagnosis and hygiene. This bill resembles the Wisconsin bill in some particulars.

ARKANSAS

The bill creating a state board of health has passed both houses and has been signed by the governor. This bill was summarized in THE JOURNAL, February 1, p. 391.

CALIFORNIA

Probably no state legislature has before it more bills on public health subjects than the California legislature, more than one hundred bills having been introduced so far. The California *State Journal of Medicine*, in discussing the various bills introduced, comments on twenty-three bills, all of which make some change in the existing law regarding the practice of medicine. About thirty-five bills are now before the legislature on the single question of the state regulation of the practice of medicine. Eighty bills relate to women and children, and their employment.

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COLORADO

A similar condition exists in Colorado, in which a large number of bills have been introduced, attempting to regulate every possible phase of public health. H. B. 720 creates a state department of public health in place of the present state board. There are six bills amending the medical practice act and several amending the state board of health law. There are also a sterilization bill; a bill providing for the sanitation of places where foods are manufactured or stored, and bills providing for factory inspection and for the reporting of occupational diseases.

IDAHO

H. B. 246 amends the medical practice act by requiring only a high-school education and a diploma as a condition for a license.

INDIANA

The anticocain bill has passed the house. The optometry bill has been killed in the house. The chiropractic bill has been killed in the senate.

IOWA

S. F. 253 requires all food packages to be marked as to their contents and quantity. House bills provide for a state commissioner of health in place of the present board and for medical school inspection.

MASSACHUSETTS

H. 482 is an antivaccination measure which prohibits the use, distribution or sale of vaccine virus; H. 981 reorganizes the state board of health, providing five members; a chairman at $8,000 per year, a secretary and engineer at $5,000 each, and two other members at $3,500.

MICHIGAN

S. B. 146 provides for the appointment and qualifications of municipal health officers, and authorizes the governor to remove health officers or members of a municipal health board; Senator Amberson has introduced a bill drafted by Dr. Victor C. Vaughan, providing for the reorganization of the state department of health, by which the state is divided into health districts, composed of one county each, except that each city of more than 18,000 shall form a separate district. Any two counties having a population of less than 20,000 may organize into a joint health district. Each district is to have a health commissioner appointed for four years who is to act as county physician, and is to receive a salary of from $1,500 to $3,000, according to the population of the district.

MINNESOTA

Minnesota seems particularly interested in tuberculosis, bills making tuberculosis reportable, creating a state tuberculosis commission and providing for county tuberculosis sanatoriums being under consideration.

MISSOURI

H. B. 650 amends the medical practice act by exempting "any person practicing mind-cure or any other method of healing, where no poisons or dangerous drugs are employed or surgical operations performed.

NEBRASKA

About fifty bills on public health topics have been introduced, of which the committee on public policy and legislation of the state medical association has acted on about thirty. The state committee has approved of bills on occupational diseases; issuing of marriage license to those who are physically unfit; the sanitation of factories, mills and workshops; the division of fees; prohibiting common drinking-cups; the inspection of public institutions and schools by county boards, and for sterilization of criminals.

NEW HAMPSHIRE

A bill has been introduced, making it a criminal offense for practicing physicians to refuse to enter into consultation with other physicians.

NEW YORK

The state factory commission has presented thirty-two bills regulating the hours and conditions of employment of men, women and children employed in various factories; also providing for ventilation, toilet facilities, heating, lighting, etc. An important series of bills deals with measures for the prevention of accidents. At the request of Governor Sulzer, a bill has been introduced creating a sanitary milk department and prohibiting the use of any poisonous coloring matter in food products. Health Commissioner Lederle of New York has protested against the bill prohibiting tuberculosis hospitals within the city limits. Bills have been introduced regulating registered nurses, appropriating $10,000 for an antitoxin farm, defining unprofessional conduct on the part of physicians, creating a commission for the purpose of investigating animal experimentation, restricting the sale of cocain, and providing for the inspection of oyster-beds. A senate bill providing for health certificates as a requirement for marriage licenses has been killed in committee. An antivivisection bill has been defeated in the senate committee by a vote of 69.

NORTH CAROLINA

The state legislature has passed a bill raising the standard requirements for admission to medical schools, as well as the requirements for graduation and license. These increased conditions go into effect in 1917. The bill providing for the registration of vital statistics will also probably pass.

OREGON

S. B. 300 forbids the advertising of cures for sexual diseases. It has passed both houses, and will, undoubtedly, be signed by the governor. It is probably the most satisfactory law on this subject that has been enacted. It forbids the publication of any advertisement of cures of sexual diseases, and provides for the punishment both of the advertiser and of the owner or manager of any newspaper in which advertisement shall appear. Another bill provides for a state board of control over the eleven state institutions now having separate boards. A bill has passed both houses permitting persons failing to secure a license to practice medicine, to be reexamined only in those subjects in which they have failed. Another bill, which has passed both houses, appropriates $10,000 for public education in sex hygiene. This fund is to be expended through the treasury of the Oregon Social Hygiene Society which is required to file a report accounting for the expenditure of the amount. Another bill requires the reporting of all cases of tuberculosis.

PENNSYLVANIA

Several bills have been introduced, amending the laws regulating the preparation and marketing of meat, also enlarging the powers of the State Board of Health for the inspection of all animals intended for food. Bills have also been introduced providing for the payment of 20 cents to a physician for each report of a communicable disease and requiring all mills where 500 persons are employed to have a physician in attendance for the protection of the employees.

SOUTH CAROLINA

A bill has been introduced, enlarging the power of the state board of health, giving it authority to enforce rules and regulations for the sanitation of passenger cars, steamboats, penitentiaries, hotels, schools and all other public places, to provide for the care of isolated persons having communicable diseases, to regulate the disposal of sewage and waste in any incorporated city or village, to provide for the investigation of the causes of disease, etc. The bill, although a short one, is one of the broadest on this subject that has been presented.

TENNESSEE

The chiropractic bill, which applied only to Knox County, has been vetoed by the governor. Four bills of special interest to the medical profession are now before the legislature. These are a vital statistics bill, a medical inspection bill, a bill amending the medical practice act, and a bill changing the method of appointment of the State Board of Health.

UTAH

S. B. 173 making tuberculosis reportable, has passed the senate.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7-8. Sec., Dr. John Wix Thomas.

CALIFORNIA: San Francisco, April 1. Sec., Dr. Charles B. Pinkham, 929 Butler Building.

COLORADO: 612 Empire Building, Denver, April 1. Sec., Dr. David A. Strickler.

IDAHO: Boise, April 1. Sec., Dr. O. J. Allen, Bellevue.

MINNESOTA: State University, Minneapolis, April 1-4. Sec., Dr. Thomas S. McDavitt, Lowry Building, St. Paul.

MONTANA: The Capitol, Helena, April 1. Sec., Dr. W. C. Riddell.

OKLAHOMA: Oklahoma City, April 8. Sec., Dr. John W. Duke, Guthrie.

RHODE ISLAND: State House, Providence, April 3. Sec., Dr. Gardner T. Swarts.

WEST VIRGINIA: Huntington, April 14. Sec., Dr. H. A. Barbee, Point Pleasant.

Strengthening the Medical Course

The Association of Medical Colleges wants to add one more year to the course in medicine, making it five instead of four. Even at that rate, no one need fear that the output will fall short of the demand. Thorough preparation in the science of treating human disease is more important than granting diplomas and flooding the country with half-baked M.D.'s. . . . The Association likewise insists on raising the standard of entrance requirements, which unquestionably has been much too low, making it too easy to get in and out of medical colleges. Young men and women with but a smattering of elementary education have been racing through the professional schools. No one can safely deny that the tendency is demoralizing to the profession; that ethics gives way to commercialism and that the overweening spirit "to get" too often supplants the exalted purpose of service to humanity. If lengthening the term of preparation helps to correct these abuses, so much the better for the well and the sick.—*Omaha Bee*, March 2, 1913.

Virginia December Report

Dr. Herbert Old, secretary of the State Board of Medical Examiners of Virginia, reports the written examination held at Richmond, Dec. 17-20, 1912. The number of subjects examined in was 17; total number of questions asked, 101; percentage required to pass, 75. The total number of candidates examined was 31, of whom 19 passed and 12 failed including 1 osteopath. Twenty-three candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(*) 76; (†) 75	77, 78
Tulane University of Louisiana	(1912)	75
University of Maryland	(1912)	76
Maryland Medical College	(1909)	75
Leonard Medical School	(1912); (†) 75, 80, 80	
Memphis Hospital Medical College	(1902)	83
Meharry Medical College	(1912)	79
University of the South	(1909)	75
Medical College of Virginia	(1911) 75; (1912) 77, 78, 80, 86, (†) 75	
University College of Medicine, Richmond	(1912)	75.2

FAILED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1912)	68
Maryland Medical College	(1909)	69.8
Leonard Medical School	(1910) 73; (1912)	71.5
Meharry Medical College	(1911)	55
University of West Tennessee	(1911)	58
Chattanooga Medical College	(1908)	52
University of Tennessee	(1912)	53
Medical College of Virginia	(1910) 70; (1912) 62,	72.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1908)	Illinois
Georgetown University	(1905)	Dist. Colum.
College of Physicians and Surgeons, Chicago	(1905)	Iowa
Drake University	(1909)	Iowa
University of Louisville	(1910)	Maryland
Louisville and Hospital Medical College	(1908)	Tennessee
College of Physicians and Surgeons, Baltimore	(1905); (1907) West Virginia	Maryland
University of Maryland	(1905) (1911) Maryland; (1910) West Virginia	
Harvard Medical School	(1884) Pennsylvania; (1890)	N. Carolina New York
Columbia University, College of Phys. and Surg.	(1894)	N. Carolina
North Carolina Medical College	(1910)	W. Virginia
University of Pennsylvania	(1889)	Washington
University of Nashville	(1905)	Tennessee
Tennessee Medical College	(1909)	Tennessee
University of Virginia	(1895)	N. Carolina
Medical College of Virginia	(1908)	W. Virginia
University College of Medicine, Richmond	(1911)	N. Carolina

* Work completed, but for special reason has not yet secured diploma.

† Work completed; will receive diploma in June, 1913.

Oklahoma January Report

Dr. John W. Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 14-15, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 70. The total number of candidates examined was 12, of whom 8 passed including 1 osteopath and four failed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas	(1912)	70, 71
Rush Medical College	(1896)	76
College of Physicians and Surgeons, Chicago	(1911)	85
Kansas City Hahnemann Medical College	(1910)	71
Jefferson Medical College	(1912)	82
Memphis Hospital Medical College	(1912)	74

FAILED

College	Year Grad.	Per Cent.
College of Med. and Surg., Physiomedical, Chicago	(1903)	54
Barnes Medical College	(1905)	*76
Memphis Hospital Medical College	(1911)	66
Meharry Medical College	(1909)	69

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Hospital College of Medicine, Louisville	(1904)	Tennessee
Louisville Medical College	(1906)	Kentucky
Kentucky School of Medicine	(1876)	Texas
Tulane University of Louisiana	(1898)	Texas

* Fell below 50 per cent. in one branch.

The questions asked were as follows:

ANATOMY AND HISTOLOGY

1. Draw a diagram showing the arrangement of tarsal bones. 2. Describe the ankle-joint. 3. Give the insertion and the nerve-supply of the pectoralis major muscle. 4. Name the principal fossæ at the base of the skull. 5. Locate the hypophysis cerebri, or pituitary body. 6. Give a method for locating the fourth lumbar interspace. 7. Name the principal branches of the internal carotid artery. 8. What is the difference between striated and non-striated muscular fiber? 9. Name the layers of the skin, with subdivisions of each. 10. Briefly describe a uriniferous tube.

MATERIA MEDICA AND THERAPEUTICS

Give indications for the use of the following: 1. Aconite. 2. Chloral hydrate. 3. Nux vomica. 4. Magnesium sulphate. 5. Veratrum viride. 6. Cantharides. Treat the following diseases, giving doses of drugs used, their therapeutic effect, diet and prognosis: 7. Tuberculosis. 8. Tabes dorsalis. 9. Malaria. 10. Rheumatism.

TOXICOLOGY AND MEDICAL JURISPRUDENCE

1. Give ten visceral changes leading to sudden death. 2. Give the post-mortem appearances of death from starvation. 3. Give some of the important symptoms of insanity. 4. What are the legal rights of physicians in regard to their relations with their patients? 5. What is understood by manic depressive insanity? 6. How does quinin produce death? What is a fatal dose? 7. How does turpentine produce death? What is a fatal dose? 8. What are the symptoms of chronic poisoning by lead? 9. What are the symptoms of nicotin poisoning? 10. What would be your attitude in regard to professional secrets?

BACTERIOLOGY AND PATHOLOGY

1. Name five glands most frequently affected by amyloid degeneration, and locate each gland. 2. Name three changes that take place in extravasated blood. 3. What is infarction? describe same, and tell where most frequently found. 4. What is a metastatic abscess? Give cause for same. 5. Describe the changes that take place in the structure of a tuberculous hip-joint. 6. Define sarcomatous tumor, melanosarcoma, fibroma, neuroma, endothelioma. 7. What microscopic differences do you find in the throat lesions of diphtheria and follicular tonsillitis? 8. Define bacteria; leukocytes; coccus; spirillum; phagocytes; asepsis; antiseptic; sterile. 9. Define mycelium; flagellum; ptomains. 10. What is tuberculin? How obtained? How used? Do you always have a reaction from its use? If so, name the most common symptoms.

SURGERY

1. Describe active congestion; passive congestion. State their points of difference. 2. Give the treatment for rattlesnake bite. 3. What are the most approved operative procedures in the treatment of varicose veins of the lower extremities? 4. Give treatment of acute suppurative osteomyelitis. 5. What symptoms follow division of the facial nerve outside of the skull? 6. What are the complications of dislocation of the hip? 7. What is the treatment of depressed fracture of the skull? 8. What are the possible mechanical obstructions in the reduction of fractures? 9. Give the indica-

tions for operating in a compound fracture of the thigh, and describe the operation in detail. 10. Mention the symptoms and signs of acute appendicitis.

PHYSICAL DIAGNOSIS

1. What is a stethoscope? Name its uses. 2. Name the advantages of the stetoscope. 3. Give technic of auscultation. 4. Describe and give causes for amphoric breathing. 5. How would you determine the areas of cardiac dulness? 6. What is the clinical value of the superficial area of cardiac dulness? 7. What are the causes of heart sounds? 8. Describe first sound of a healthy heart. 9. Diagnose aortic aneurysm. 10. Give physical signs of pulmonary tuberculosis in third stage.

GYNECOLOGY

1. Give etiology and treatment of pelvic abscess. 2. Describe the blood-supply of the uterus and ovaries. 3. Why does retrodisplacement of the uterus cause leukorrhea? 4. Give early symptoms of cancer of the uterus. Give treatment. 5. Diagnose carcinoma of the breast. 6. What are the most common causes of sterility? 7. Give causes of menorrhagia. 8. Give causes and treatment of ulcer of the cervix. 9. Give indications for curettage. 10. Diagnose uterine fibroid.

PHYSIOLOGY

1. What secreting glands are found in the walls of the intestines? 2. What are the functions of the eustachian tube? 3. Draw a diagram of a hemisphere of the brain showing the fissure of Rolando; also locate motor centers on diagram. 4. What is the function of the semilunar valves guarding the aorta? Does this valve contribute to the sounds of the heart? If so, which one? 5. What would be the result of the removal of the adrenal bodies? 6. Why do the veins of the brain not have valves? 7. What is the function of the cerebellum? 8. Where do the white blood-corpuscles originate? 9. Give deep origin of third cranial nerve, and tell its function. 10. Name four ductless glands.

CHEMISTRY

1. Give three examples, by symbols, showing that there is one element common in all acids. 2. Give physical, chemical and physiologic properties of ptomains. 3. What is an amalgam? An alloy? 4. Give antidotes for carbolic, nitric and hydrochloric acids. 5. In case where specific gravity of urine is 1.030 or 1.032 and there is considerable sediment in urine, if examination shows no albumin, what would the sediment likely be composed of? 6. What are the halogens? 7. (a) What is collodion, and for what used? (b) Give symbols of hydrogen peroxid. 8. Give Fehling's test. 9. What is a base, a salt and an acid? 10. How are formaldehyd and potassium permanganate used together?

OBSTETRICS AND HYGIENE

1. What do you carry in your obstetric bag? 2. In vertex presentation, state how you would differentiate the anterior from the posterior fontanel. 3. Define, give etiology and treatment of milk-leg. 4. Give indications for producing an abortion. How would you proceed? 5. Give indications for the induction of premature labor. Give, in detail, your procedure. 6. Give instructions for the care of the mother for the first two days after delivery. 7. Give instructions for the care of the child for the first two days after birth. 8. Describe a fetus delivered during the sixth month. 9. How would you treat convulsions coming on after delivery? 10. When pneumonia is prevalent, how would you instruct one to prevent his contracting pneumonia?

Book Notices

LEAD-POISONING AND LEAD ABSORPTION. The Symptoms, Pathology and Prevention, with Special Reference to Their Industrial Origin and an Account of the Principal Processes Involving Risk. By Thomas M. Legge, M.D., D.P.H., H.M. Medical Inspector of Factories, and Kenneth W. Goadby, M.R.C.S., D.P.H., Pathologist and Lecturer on Bacteriology, National Dental Hospital, London. International Medical Monographs. General Editors: Leonard Hill, M.B., F.R.S., and William Bulloch, M.D. Cloth. Price, $3.50. Pp. 508, with illustrations. New York: Longmans, Green & Co., 1912.

This is one of the series of International Medical Monographs, written by two men whose experience entitles them to speak with authority on industrial plumbism. T. M. Legge is medical inspector of factories for Great Britain, and Kenneth Goadby is "appointed surgeon to certain smelting and white-lead factories in East London." This term does not mean, as it would in America, that Dr. Goadby has charge of the surgical work only of these factories. His function is to examine all employees weekly or fortnightly for signs of lead-poisoning.

The book is written in a style to be understood by laymen as well as by medical men. It is not a critical review of the subject so much as a clear statement of the authors' conclusions from their own experience. Their principal thesis is that lead-poisoning is mainly dust-poisoning, that in the vast majority of cases of industrial plumbism the portal of entry of lead and its compounds is through the respiratory tract. This statement is supported by statistics of poisoning in the different trades, the greatest incidence and the most rapidly developing cases occurring in the very dusty trades (white lead, red lead, storage batteries, pottery glazing) and especially in those operations attended with the greatest amount of dust. Experiments on cats are also cited to prove that poisoning occurs with greater rapidity and certainty when the animals inhale the dust than when they consume it with their food. The German view that the greater part of the inspired lead-dust is swallowed with the saliva and eventually reaches the intestines is refuted by the observation that the animals made to inhale lead-dust succumbed to an amount which was less than one-tenth of that administered in food to other animals which showed no symptoms. The ultimate fate of the inhaled dust was not ascertained. There are interesting chapters on plumbism of the central nervous system, in which Edinger's *Aufbrauchtheorie* is fully discussed. Perhaps the most valuable part of the book is that dealing with preventive measures in workshops and factories. These are not all applicable to American methods of industry, but in the main they are, and in all that regards dust prevention and the personal care of the workman they can be recommended to the increasing body of physicians who are attached in advisory capacity to large industrial establishments in the United States.

LES ORIGINES DE LA TRÉPANATION DÉCOMPRESSIVE. Trépanation Néolithique, Trépanation Pré-Colombienne, Trépanation des Kabyles, Trépanation Traditionelle. Par le Dr. Lucas-Championnière, Chirurgien Honoraire de l'Hôtel-Dieu. Paper. Price, 5 francs. Pp. 131, with 32 illustrations. Paris: G. Steinheil, 1912.

In this book the author gives his opinion as to the technic employed and the indications for trephining among the peoples of long ago and among those of our time who have not been considered as possessed of our surgical and anatomic knowledge. In arriving at this opinion he has studied the trephined skulls of prehistoric peoples, those of the pre-Columbian Peruvians, and those found in the old cemeteries of the Christian age. Trephining is still practiced as a custom surviving from long ago among the Berbers of Algiers, the Montenegrins and the miners of Cornwall. Some evidence was gained from the first and last of these sources. The author concludes that trephining was performed largely by means of a boring instrument: the holes surrounding the piece of skull to be removed touching or nearly touching each other. Severe pain in the head following on or independent of trauma is considered as the chief indication for the operation. Illustrations show trephined skulls from prehistoric caves in France and from pre-Columbian Peru.

SERUM DIAGNOSIS OF SYPHILIS AND LUETIN REACTION. Together with the Butyric Acid Test for Syphilis. By Hideyo Noguchi, M.D., M.Sc. Cloth. Price, $3. Pp. 306, with 23 illustrations. Philadelphia. J. B. Lippincott Company, 1912.

The third edition of Noguchi's work differs little from the previous one in the account of the technic of the Wassermann test and its modifications. By the use of extracts of pure cultures of the *Spirochaeta pallida* the author has been able to show that in early cases of syphilis it is not a true specific antibody that gives the positive result to the Wassermann reaction, although such an antibody is found in immunized animals and in some of the late cases of human syphilis. These findings suggest new problems in diagnosis and prognosis of the disease. A chapter is added on the luetin reaction, illustrated by several colored plates. The book thus brings the serodiagnosis of syphilis fully up to date.

THE COURSE OF OPERATIVE SURGERY. A Handbook for Practitioners and Students. By Prof. Dr. Victor Schmieden, Privatdocent of Surgery in the University of Berlin, with a Foreword by Prof. Dr. A. Bier. Translated and Edited by Arthur Turnbull, M.B., M.A., B.Sc., Demonstrator of Anatomy in the University of Glasgow. Second Edition. Cloth. Price, $4 net. Pp. 345, with 435 illustrations. New York: William Wood & Co., 1912.

This is a well-written and well-illustrated discourse on operative surgery. Thirty pages are devoted to the ligation of vessels, thirty to excision of the various joints, and thirty-six to amputations and disarticulations, the remainder of the book being given over to operations on the extremities, head and neck, breast and trunk, and abdominal and urogenital operations. Each subject is discussed clearly and concisely, and the illustrations elucidate the text admirably.

A PRACTICAL TEXT-BOOK OF THE DISEASES OF WOMEN. By Arthur H. N. Lewers, M.D., F.R.C.P., Senior Obstetric Physician to the London Hospital. Seventh Edition. Cloth. Price, $4 net. Pp. 540, with 258 illustrations. New York: Paul B. Hoeber, 1912.

In preparing a new edition of this work, well known to the specialist in America, the author adheres to his original purpose of offering to the practitioner and student a text essentially practical. Hence the clinical and practical characters of the book have been retained, as having proved in previous editions useful toward securing the object aimed at. Thus the various divisions of the subject have been arranged in a natural order, from a clinical point of view, first dealing with the history, then with the physical examination, then with diseases of the external genitalia, diseases of the vagina, of the uterus, etc. Numerous cases are detailed to illustrate points when emphasis is desired.

Many of the chapters have been rewritten in part, much new matter being added, and the entire work has undergone revision. A full description of Wertheim's radical hysterectomy for carcinoma of the uterus has been added to the chapter on cancer. The section devoted to fibroid tumors has been largely amplified. The illustrations are profuse and serve the purpose of illuminating the text. The plates in black and white and those in three colors are particularly helpful, but the microphotographs, though abundant, disclose the fault usually found in such pictures, a loss of definition in the reproduction. Dudley's operation for intraperitoneal shortening of the round ligaments, and a modified Tait "flap-splitting" procedure for perineal laceration are described. While some points would be open to adverse criticism from our American point of view, on the whole the book fulfils the author's design, that of a practical text.

SURGERY OF THE RECTUM FOR PRACTITIONERS. By Sir Frederick Wallis, M.B., B.C., F.R.C.S., Surgeon to Charing Cross Hospital, London. Cloth. Price, $5.50. Pp. 355, with 129 illustrations. New York: Oxford University Press, 1912.

This is an enlarged edition of the work published by the same author in 1906. The old matter has been changed, and several new chapters have been added. Among these may be mentioned two chapters on the affections of the colon and sigmoid, in which no mention is made of diverticulitis of the colon or of the sigmoid, a condition which is by no means rare. Under treatment of prolapse of the rectum the bad effects of the injection of paraffin are shown and two cases reported, one of which resulted fatally two years after the first injection. The use of paraffin in this way is properly condemned. More useful and practical points are mentioned in connection with the minor affections of the anus and lower rectum than in the more serious troubles higher up, which are discussed less satisfactorily by the author.

STUDIEN ÜBER DARMTRAGHEIT (STUHLVERSTOPFUNG) IHRE FOLGEN UND IHRE BEHANDLUNG. Von Dr. Franz X. Mayr. Paper. Pp. 276. Price, 6 marks. Berlin: S. Karger, 1912.

Probably no section of the diseases of the digestive tract is of more importance than the disorders that go under the common designation of constipation, and there seems to be no field of medicine in which superficial views and practices are more common. The author has endeavored to base his advice on the considerations of etiology and a thorough study of the functions involved. The work gives many valuable hints and will repay careful reading.

GYNÄKOLOGISCHES VADEMEKUM FÜR STUDIERENDE UND AERZTE. Von Prof. D. A. Dührssen. Tenth Edition. Cloth. Price, 6.80 marks. Pp. 306, with 149 illustrations. Berlin: S. Karger, 1913.

This small volume serves admirably the purpose for which it is so frankly published, that of a pocket text-book for the student who wants his information in a nutshell. While thus boiled down to a statement of facts, it is surprising how much argument is introduced. An example of this is seen in the few pages devoted to the pessary in the treatment of retroflexio uteri. The volume is a text on gynecology in miniature, and as a result is neither complete nor discursive.

FOOD IN HEALTH AND DISEASE. By Nathan S. Davis, Jr., A.M., M.D., Professor of the Principles and Practice of Medicine in Northwestern University Medical School. Second Edition. Cloth. Price, $3.50 net. Pp. 449. Philadelphia: P. Blakiston's Son & Co., 1912.

This book is a well-balanced and sensible discussion of the value of food in health and disease. While not unduly brief, it is as concise as is compatible with thoroughness. It is divided into two main parts; in Part I, general principles of diet and diet in health (thirteen chapters) are considered, and in Part II, diet in disease (twelve chapters).

The views expressed are sound and based on the most modern conceptions of chemistry and physiology. In Part I, for instance, the author's familiarity with the most recent scientific investigations is shown by his use of the thorough and revolutionary work of Mattill and Hawk on water-drinking and metabolism, and by his discussion of beef extracts and bouillons, the real value of which, as he points out, may be lost by improper manufacture. His sound, common-sense judgment is shown in his treatment of such subjects as mineral waters, alcohol and milk preparations. The benefits ascribed to mineral waters the author regards as due chiefly to change of diet, outdoor exercise and freedom from home cares. Although he regards alcohol as of value in some cases, he points out that usually its benefits are outweighed by the damage it does to the system. The author's unbiased discussion of milk modified as kefir or koumiss is refreshing after the exaggerated and glowing claims of the manufacturers of various proprietary lactic acid preparations.

Part II, dealing with diet in disease, shows the same sane and scientific attitude as the first. The author calls attention to the causes of diseases, especially in relation to diet and metabolism, and gives the proper diet for each disease discussed. The text is amply supplemented by tables and recent statistics on dietetics and metabolism.

A MANUAL OF IMMUNITY. For Students and Practitioners. By Elizabeth T. Fraser, M.D. Cloth. Price, 5 shillings net. Pp. 199. Glasgow: James MacLehose & Sons, 1912.

This little work gives a plain account of the facts and theories of immunity that will be welcome to the reader who comes to its perusal without any previous knowledge of the subject. A brief historical review is given and then the parts played by the body fluids, by the cells, and by the invading microorganism in the production of immunity are described and discussed. The rest of the book is divided into chapters dealing with the therapeutic uses and diagnostic applications of immunity reactions. Other chapters deal with anaphylaxis, the side-chain theory and chemotherapy, the latter including Wassermann's experiments in the destruction of malignant tumors. The explanations given are clear and the directions are practical. We have no doubt that this little manual will prove useful to many who have had difficulty in grasping what must be recognized as a somewhat difficult subject.

PRACTICAL PHYSIOLOGIC CHEMISTRY. Designed for Use in Schools of Medicine and of Science. By Philip B. Hawk, M.S., Ph.D., Professor of Physiologic Chemistry and Toxicology in the Jefferson Medical College of Philadelphia. Fourth Edition. Cloth. Price, $2.50 net. Pp. 475, with 139 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

The fourth edition of this work follows the same lines as the previous editions, and the arrangement is practically the same. It begins with a consideration of the action of enzymes, which is somewhat unusual. Throughout the work experimental laboratory exercises are interspersed. The number of methods given will be somewhat confusing to the practitioner who undertakes to use this book as a guide without advice from a practical teacher. In other respects the book is excellent.

A LABORATORY HAND-BOOK FOR DIETETICS. By Mary Swartz Rose, Ph.D., Assistant Professor, Department of Nutrition, Teachers College, Columbia University. Cloth. Price, $1.10 net. Pp. 127 New York: The Macmillan Co., 1912.

This little work presents in clear form materials for a laboratory course in dietitics. The general principles for the calculation of the calorie value of foods and the food requirements of various classes of people are laid down. The figures given for the energy requirement of children will be useful

for reference, as they are not usually included in such works. The data by which the student is expected to solve dietetic problems are furnished in a large number of tables. The method of solving these problems is given, together with some examples for practice. The book seems well suited for its purpose as a laboratory guide, and might easily be made useful to the practitioner in solving such problems as he may meet in practice.

OUTLINES OF EARLY DEVELOPMENT FOR OBSTETRIC STUDENTS. By R. W. Johnstone, M.A., M.D., F.R.C.S.E., Assistant to the Professor of Midwifery, University of Edinburgh. With a Preface by Sir J. Halliday Croom, Professor of Midwifery, University of Edinburgh. Cloth. Price, 1 shilling, 6 pence. Pp. 23, with illustrations. Edinburgh: John Currie, 1911.

This is a thorough and comprehensive sketch of the life-history of the human ovum. Fertilization, formation of the germinal layers, syncytium and embedding of the ovum, formation of the decidua and development of the placenta are clearly explained in accord with the most modern conceptions, and illustrated by excellent diagrams. The whole is a satisfactory exposition of the subject for medical students.

Medicolegal

No Liability for Error in Judgment—Failure to Discover Infantile Paralysis

(Brydges vs. Cunningham (Wash.), 124 Pac. R. 131)

The Supreme Court of Washington affirms a judgment rendered for the defendant over a verdict for the plaintiff. The latter was about 7 years of age when she fell from a porch one Thursday evening and complained of pain in her hip and leg, which her mother sought to alleviate by applying liniment, which seemed to relieve the pain. Friday and Saturday the child played around as usual, making no complaint, and was apparently fully recovered from the fall. Sunday morning she was still apparently well and went to Sunday school, from which she returned complaining of pain. When asked to locate the pain, she replied: "I have hurts all around me." She was put to bed, and her mother treated her all day with hot cloths wrung out in turpentine. In the evening the defendant was called in, and at first diagnosed the case as appendicitis and advised an operation. This was objected to by the family, and Monday afternoon another physician was called in consultation, when it was decided that no operation was necessary, but that the trouble was typhoid fever, for which the child was treated for about twenty-one days. During the defendant's visits, when his attention was called to the cold and swollen condition of the hip and leg, he gave it as his opinion that the condition would pass away with the fever, and that Nature should be left to take her course. The plaintiff's contention was that she was suffering from an injury to the sciatic nerve, resulting in permanent paralysis of her right hip and leg, and that the defendant improperly and negligently failed to apply the proper treatment, while he contended that the child was, and from the beginning had been, afflicted with infantile paralysis, for which there is no known cure.

It needs no argument, the court says, to show that there could be no recovery of damages against the defendant, unless, as a medical man of ordinary skill, he should have correctly diagnosed the case as an injury to the sciatic nerve, and was negligent in his treatment. If, then, there was no evidence that there was such an injury, when all the facts on which the diagnosis must be predicated were included, but rather the evidence, without exception, excluded such an injury, there was nothing to submit to the jury. If the defendant could be held liable because he did not make a proper diagnosis of the case on his now theory that the child was suffering from infantile paralysis, then the court was in error. But in an action for malpractice a physician cannot be held for an error in judgment as to the disease his patient is suffering from, since all that any physician can give to any case is his best judgment; and, if he exercise that judgment as a man of ordinary skill would exercise it, there can be no recovery of damages. The testimony of the physicians called by the plaintiff was to the effect that the symptoms present in this case from Thursday night to Sunday morning might be diagnosed by men of ordinary skill in the medical profession as typhoid fever, multiple neuritis or infantile paralysis, and that the treatment given by the defendant in no way contributed to the present condition of the child. There was, therefore, no evidence in the case that the treatment by the defendant was negligent or unskilful. The most that could be said was that he did not discover the infantile paralysis. From the evidence he could not have cured it if he had. It could not, therefore, be said that his failure to discover its presence, or his subsequent treatment, was responsible for the child's present condition.

Construction and Constitutionality of Law—Holding Out as Physician or Surgeon an Offense Without Actual Practice

(State vs. Lindsay (Vt.), 84 Atl. R. 612)

The Supreme Court of Vermont affirms a conviction of the defendant of representing himself to be a physician. The court says that prior to the passage of No. 133, Acts of 1904, it was provided by statute that a person who "practices medicine, surgery or midwifery, . . . and is not duly authorized by a certificate issued and recorded as provided," should, on conviction, pay a specified fine. But by Section 10 of the act referred to this provision was repealed, and it was therein provided that a person who, "not being licensed as aforesaid, shall advertise or hold himself out to the public as a physician or surgeon in this state," should be fined as therein specified; and this is the provision of the statute as it now stands.

It is thus seen that the offense expressly covered by the statute is complete when an unlicensed person advertises or holds himself out to the public as a physician or surgeon. Actual practice is not required to bring one within the penalized class. No attempt is made in the statute to further define or explain the offense. What one must do to amount to advertising or holding himself out as a physician or surgeon is not specified. But, whatever the other essential elements of the offense may be, it is clear that, without something which amounts to a representation on the part of the person charged that he is in fact a physician or surgeon, no offense is committed. So practicing medicine without a license is now criminal only when it involves a representation that the person acting is a physician or surgeon.

The defendant relied on Section 5 of No. 151, Acts of 1908, which amends P. S. 5371, insisting that unlawful discrimination is therein provided, which vitiates the whole statute, and expressly admitted in his brief that without this amendment no constitutional objection to the statute could have been raised. But the fault thus found by the defendant exists, if it exists at all, in the section which defines a physician or practitioner of medicine within the meaning of the chapter. It obviously relates to actual practice, and leaves untouched the offense created by P. S. 5370. It describes those who are required to obtain a license, but only those included in Section 5370 are made criminals. If the statute had remained as it was before the amendment of 1904, the constitutional questions raised by the defendant would merit consideration; but, in the existing circumstances, they are of no present consequence. The defendant did not question the power of the legislature to make criminal the mere act of an unlicensed person in representing himself to be a physician, and so, of course, the court does not consider it.

The court also holds that the defendant could be required to answer the information in this case notwithstanding the pendency of a previous complaint against him. The rule in this regard is different in criminal cases from that in civil cases and where a part of the penalty goes to the complainant. However, it is sometimes said that the proceedings must be pending in the same court, or the one will abate the other. But this is to engraft on the rule a feature unknown to the common law. There is, of course, no jeopardy in the mere pendency of a previously instituted prosecution.

Society Proceedings

COMING MEETINGS

Alabama State Medical Association, Mobile, April 15-18.
American Urological Association, Boston, April 15-17.
California State Medical Society, Oakland, April 15-17.
Georgia State Medical Association, Savannah, April 16-18.
Maryland Medical and Chirurgical Faculty, Baltimore, April 22-24.
Mississippi State Medical Association, Vicksburg, April 8-10.
Missouri Valley Medical Society, Kansas City, March 20-21.
New York State Medical Society, Rochester, April 29-May 1.
South Carolina State Medical Association, Rock Hill, April 15-17.
Tennessee State Medical Association, Nashville, April 8-10.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Jan. 27, 1913

The President, DR. H. R. M. LANDIS, in the Chair

Certain Types of Arthritis Deformans and Their Management

DR. ROBERT B. OSGOOD: The views I express will be from an orthopedic point of view, and I shall leave unsettled the question whether we are dealing with one or more than one distinct disease. I shall adopt a temporary nomenclature which I realize is imperfect, but which defines what seem to me distinct clinical types. The four types to be discussed are infectious, toxemic, atrophic and hypertrophic. I find it difficult to connect acute articular rheumatism in any way with the chronic manifestations of arthritis deformans, and I believe it has brought about no causal relation. I have been equally unsuccessful in associating true gout with the types to be discussed. By chronic infectious polyarthritis I mean an arthritis usually of more or less sudden onset. If unaffected by treatment, the disease is commonly progressive. We may include in this type those cases of gonorrheal arthritis in which the cocci may be recovered from the joints and those cases in which other bacteria have been found either in the joint effusions or in the tissues, especially the villi removed at operation. In the second type, chronic toxemic polyarthritis, we may include the cases of chronic polyarthritis following influenza, associated with chronic infections of the nasopharynx and sinuses, ulcerative processes in the intestines, the so-called auto-intoxications often in association with enteroptosis, and that form of arthritis deformans known as Still's disease. Careful search has failed to find the actual presence of bacteria in many of these joint conditions in which the early picture is in all respects consistent with the existence of an infection.

The third or chronic atrophic polyarthritis is clinically to my mind almost, if not quite, an entity. The clinical histories of this type less strongly suggest the direct result of an infection or its toxic products. The picture is like some trophic disturbance of central nervous origin. I believe these are the cases that have so strongly suggested the neural theory of the etiology of the so-called rheumatoid arthritis. In the chronic hypertrophic polyarthritis type, I am inclined to the belief that we are dealing with an arthritis deformans so essentially different from the other types that it may be considered from the point of view of symptomatology and treatment as an entity.

If the first two of these four divisions are grouped together, three types of arthritis deformans seem to be clinically distinguishable, the infective, the atrophic and the hypertrophic. Pathologic examination and the skiagraphic findings seem to suggest a certain purity in these types. In regard to etiology, I have arbitrarily made the first division on an infective basis. The second type I also believe strongly to be the result of either some undiscovered direct invasion of the joint tissue by bacteria or more probably to result from the development of one or more than one toxic substance by various forms of bacterial growth in the nasopharynx, the intestine or some other focus. As to whether in the third or trophic type, the toxic type is exerted, primarily, on the central nervous system and, secondarily, on the joint tissues, I have no certain proof. The evidence seems to point to the correctness of this theory of Painter, Jones and others. The fourth type, hypertrophic arthritis, seems to be much more likely the result of faulty metabolism than of an infection or an infectious toxemia. In the first three types no effort should be spared to obtain the most perfect hygienic conditions of living with as much life in the open air as possible.

The first step in the management of the infectious and toxemic joints should be a most careful search for a focus of infection. I have come to believe strongly that the constantly found enteroptoses may be one of the factors in faulty alimentation. Much may be expected from conservative surgery. Our attitude toward vaccine therapy should be one of receptive skepticism as far as the cure of arthritis deformans is concerned. The search for an infectious focus in the atrophic type has been attended with less success than in the two preceding. We must conserve the strength and improve the nutrition of these patients by every means at our disposal, especially by attention to the habitual splanchnoptosis. In the hypertrophic type the search for a focus of infection has not been rewarded with success. As to the use of drugs in arthritis deformans, I am convinced that empiricism rather than scientific evidence of their value has encouraged their use. Until we find the cause of arthritis deformans we must seek out all possible sources of infection. We must attempt to make the processes of alimentation and all other physiologic processes as normal as may be. But whether successful or not, we must never lose sight of the fact that this form of chronic disease is one which calls for the greatest friendliness, encouragement and effort on the part of the physician.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Twenty-Third Annual Meeting, held in Chicago, Feb. 26, 1913

The President, DR. EGBERT LE FEVRE, New York City, in the Chair

Officers Elected

The following officers were elected: president, E. P. Lyon, Ph.D., St. Louis University; vice-president, F. F. Wesbrook, M.D., University of Minnesota; secretary-treasurer, Fred C. Zapffe, M.D., 3431 Lexington Street, Chicago; members executive council, C. M. Jackson, M.D., University of Missouri, and F. C. Waite, Ph.D., Western Reserve University.

Dr. William J. Means was appointed delegate to the Conference on Medical Education of the American Medical Association, and Dr. Fred C. Zapffe was appointed delegate to the Federation of State Medical Boards.

The committees on medical education and pedagogics were combined, the membership consisting of Drs. Isador Dyer, Tulane University, chairman; W. P. Harlow, University of Colorado; J. R. Guthrie, University of Iowa; W. C. Borden, George Washington University, and K. C. Babcock, U. S. Bureau of Education, Washington, D. C.

Committee on Equipment: Drs. R. Peterson, chairman, University of Michigan; P. G. Woolley, University of Cincinnati, and H. von W. Schulte, Columbia University.

Committee on Research: Drs. Eugene L. Opie, chairman, Washington University; William L. Pepper, University of Pennsylvania, and J. S. Ferguson, Cornell University.

Report of Secretary

The secretary reported that fifty-one colleges were in membership, but that this number will be reduced to forty-seven by one withdrawal and three colleges becoming extinct by merger. Twenty-one colleges are in Class A plus of the A. M. A. classification; twenty-four in Class A, and six in Class B. Of the latter, one resigned and one was later dropped from membership. The others were ordered inspected.

Report of Executive Council

On the recommendations of the executive council, the association acted favorably on the applications for membership of the medical departments of the University of Texas, Galveston; College of Physicians and Surgeons, Columbia University, New York City; University of Pittsburgh; University of Utah, Salt Lake City (two years only); University of Alabama, Mobile; University of Georgia, Augusta; University of the Philippines, Manila; Hahnemann Medical College and Hos-

pital, Philadelphia; Medico-Chirurgical College, Philadelphia; and Rush Medical College, Chicago.

The resignation of the medical department of Washburne College, Topeka, Kan., was accepted, to become effective June 30, 1913. The college will discontinue the department at the close of the present session.

The University Medical College of Kansas City, Mo., was dropped from membership for not complying with the rules and regulations of the Association.

Recommended, that on and after Jan. 1, 1914, the association will raise its present entrance requirement to one year of college work in physics, chemistry, biology and one modern language, of college grade, in consonance with the action taken by the House of Delegates of the A. M. A. at its meeting in Atlantic City, June, 1912. Carried.

Recommended, that students from Class B schools of the A. M. A. classification be given not more than two years of advanced standing and that students from Class C schools be given not more than one year of advanced standing, and then only on examination.

Report of Committee on Equipment

This committee presented the following proposed minimum standard for clinical equipment:

A. General: 1. General hospital (owned or controlled by school for clinical teaching) must be provided with minimum daily average of 100 available bed-patients, representing the various phases of medicine and surgery, and with adequate rooms and equipment for clinical teaching. For classes of fifty or more, the minimum is two patients daily per senior student.

2. Dispensary or outpatient department must be provided, managed by school, with minimum daily average of forty patient-visits, and for the school year not less than 120 patients per junior and senior student. The dispensary must have adequate rooms, equipment and patients for clinical instruction in medicine and surgery, including their principal subdivisions.

3. The organization and equipment must provide for thorough individual clinical instruction, both in hospital wards and dispensary, with at least one competent instructor to every six students. Complete clinical records must be kept, in both hospital and dispensary. Above all, equipment and facilities must be intelligently used in the training of students.

B. Special: 1. In the clinical laboratory adequate rooms, equipment and facilities must be provided especially for microscopic, chemical and bacteriologic examinations of clinical materials. These facilities must be accessible to every student during at least the entire senior year.

2. Adequate rooms and equipment must be provided for Roentgen-ray work and for electrotherapeutics.

3. In surgery, equipment and materials must be provided for thorough courses in operative surgery on the cadaver and on animals. In addition, facilities must be provided to allow each student to assist in at least six major operations and to administer a general anesthetic at least six times under competent supervision.

4. In addition to obstetric charts, models, specimens and equipment for manikin drills, etc., clinical facilities must be provided which will allow each senior student, under proper supervision, to witness at least twelve confinement cases, at least three of which he shall have entire charge of, also under proper supervision, before, during and after labor.

5. Equipment and facilities must be provided so that each student shall observe and take part in at least twelve complete autopsies.

Library: The college should have a working medical library. It should include the more modern text and reference books, the *Index Medicus* and thirty or more leading medical periodicals representing all the various departments. The library should be catalogued and accessible to students at all times.

Report of Committee on Medical Education

With reference to the concentration plan of teaching, which the committee investigated, a careful research was made and the result was that the committee concluded that this method of teaching is still on trial. In the schools in which it has been given the longest trial and the best opportunity, it seems to have worked well and to the satisfaction of both student and teacher. In the majority of schools, however, it is still a debatable subject. It certainly is inapplicable to the clinical years, except in those schools in which a fifth clinical year is added to the course. As to the fifth or hospital year, it was apparent that such a year could be adopted easily by every medical school in the country, but in order to place it on a sound basis it is necessary that the hospitals in which such teaching is to be done be investigated thoroughly and standardized or classified.

As to the entrance requirements, the committee suggested to amend Article III, Section 1, as follows:

(b) A diploma and transcript of record from a fully accredited high school, normal school or academy requiring for admission evidence of the completion of a standard course in primary and intermediate grades, and for graduation, the completion of a standard four-year high-school course, embracing two years (2 units) of mathematics, two years (2 units) of English, two years (2 units) of one foreign language, one year (1 unit) of American history and civics, and seven years (7 units) of further credit in language, literature, history or science, making the total of units at least fourteen; and in addition, one year each of physics, chemistry and biology of college grade of each not less than six semester hours.

(c) An examination in the following branches totaling 14 units:

(A) Required, 7 units.	Units.
Mathematics (minimum 2 years, maximum 3 years), algebra and plane geometry	2
English (minimum 2 years, maximum 4 years)	2
One foreign language (minimum 2 years, maximum 4 years)	2
History (U. S.) and civics	1
Total number of required units	7

(B) Elective, 7 units.

To be selected from the following:

	Units.
English language and literature (in addition to the required work)	1 to 2
Foreign languages, additional, Latin, German, Italian, French, Spanish or Greek (not less than 1 year in any one)	1 to 4
Advanced mathematics, advanced algebra, solid geometry and trigonometry (½ year each)	1
Natural science, chemistry 1 year, physics 1 year, and biology, botany, physiology and zoology (½ to 1 year each)	½ to 2
Earth science, physical geography, geology and agriculture (½ year to 1 year each)	½ to 2
Astronomy (½ year)	½
Drawing (½ to 1 year)	½ to 1
History, ancient, medieval and modern, and English (1 year each)	1 to 3
Economics (½ year)	½
Manual training (1 year)	1
Book-keeping (½ to 1 year)	½ to 1

And in addition one year each of physics, chemistry and biology of college grade, of each not less than 6 semester hours.

One unit in any subject is the equivalent of work in that subject for four or five periods per week for a year of at least thirty six weeks, periods to be not less than forty-five minutes in length. One unit is equivalent to 2 semester credits or 2 points.

The evaluation of the additional requirement beyond the high school work was referred to a special committee to confer with a similar committee of the Council on Medical Education of the American Medical Association. This special committee consists of Drs. J. R. Guthrie, University of Iowa; R. D. Coale, University of Maryland and Isador Dyer, Tulane University. Mr. Kendric C. Babcock, U. S. Bureau of Education, is an advisory member of the committee.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Philadelphia

February, X, No. 3, pp. 309-497

1 Anatomic Explanation of Many Cases of Weak or Painful Backs and Leg Paralyses. J. E. Goldthwait, Boston.
2 *Mechanical Treatment of Hip Disease. G. B. Packard, Denver.
3 *Results in Hip Tuberculosis After Mechanical Treatment (Without Traction), and Hygiene. H. L. Taylor, New York.
4 Fixation in Treatment of Hip Disease. E. H. Bradford, Boston.
5 Vertebral Osteoarthropathy. (Charcot's Disease of Spine.) S. F. Jones, Denver.
6 *Spontaneous Gangrene and Allied Conditions in Orthopedic Surgery. W. G. Stern, Cleveland.
7 Congenital Lateral Curvature of Spine. K. Kaneko, Tokio.
8 Two Cases of Congenital Absence of Fibula. P. Le Breton, Buffalo.
9 *Congenital Anterior Subluxation of Knee. L. Mayer, New York.
10 Open Reduction of Congenital Hip Dislocation by Anterior Incision. K. Ludloff, Breslau.

2, 3 and 6. Abstracted in THE JOURNAL, Aug. 3, 1912, pp. 391 and 392.

9. **Congenital Anterior Subluxation of Knee.**—Analysis by Mayer of the twenty-one published specimens of congenital hyperextension shows the pathologic lesion to consist in a subluxation of the tibia forward and upward on the femur. As

a consequence of this position the extensors of the knee and the anterior portion of the capsule are shortened, the flexors are frequently dislocated forward so as to be converted into extensors, the gastrocnemius may be displaced downward, the patella usually displaced upward, the anterior portion of the femoral condyles is usually flattened and forms an articular surface which running from below upward and forward, encroaches on the facies patellaris or entirely replaces it, and in some cases there is anteversion of the femoral epiphysis. The deformity is due to an extension of the legs *in utero*, which, owing to normal intrauterine pressure, is converted into hyperextension. The ultimate cause of the extended position is unknown.

Treatment should be begun at birth and consists at first in manipulation, with narcosis and apparatus if necessary, to reduce the subluxation. In case repeated attempts to reduce are unsuccessful, open operation is indicated. The type of operation depends first on the obstacles to reduction—usually the contraction of the quadriceps and the anterior capsule; second, the factors, ligamentous, bony or muscular, tending to cause a recurrence of the subluxation. Special care must be taken to restore the normal mechanical relationships of the gastrocnemius, since it exercises an important function, hitherto not generally recognized, in preventing hyperextension. The poor therapeutic record in patients over 2½ months old (only 33 per cent. cures) indicates the necessity for the most careful study of the pathologic lesions present, so that, if bloodless reduction fails and operation be attempted, the normal relations, muscular and ligamentous as well as bony, can be restored.

Boston Medical and Surgical Journal

February 20, CLXVIII, No. 8, pp. 261-296

11 Medical Education and Harvard Medical School. E. H. Bradford, Boston.
12 Problem of Graduate Medical Instruction. H. D. Arnold, Boston.
13 Transfusion in Treatment of Ruptured Tubal Pregnancy. R. M. Green, Boston.
14 *Mental Symptoms Associated With Renal Insufficiency. M. L. Neff, Brooklyn.
15 Ophthalmia Neonatorum: Administrative Standards. H. C. Greene, Boston.

February 27, CLXVIII, No. 9, pp. 297-332

16 An Argument for Large State Insane Hospital. T. Clouston, Edinburgh.
17 *Early Recognition of Tumors of Bladder. A. L. Chute, Boston.
18 Recent Cases of Bladder Tumors at Massachusetts General Hospital with Special Reference to Operative Technic. R. F. O'Neil, Boston.
19 Value of High Frequency Cauterization in Treatment of Vesical Papillomata. H. Binney, Boston.
20 Symptomatology of Kidney Tumors: Study of Seventy-Four Cases from Massachusetts General Hospital. J. D. Barney, Boston.

14 **Renal Insufficiency.**—Of 139 cases investigated by Neff showing excitement, elation or irritability 117 showed degeneration of the kidney, and in 99 of these degeneration of the liver was also present. Of the remaining 22 cases, twelve showed degenerative changes in the liver, and in six the kidney was tubercular.

A second series of 100 cases, in which depression was the most marked symptom, showed 43 cases of chronic interstitial nephritis and 33 of chronic parenchymatous nephritis. Degenerative conditions of the kidney of a chronic type were present in eight other cases, and four showed acute nephritis. Of the remaining twelve cases four had tuberculous kidney, and seven showed degenerative changes in the liver. Of eight cases of paranoia six showed degeneration of the kidneys. Of eleven cases of manic-depressive insanity ten showed degeneration of the kidney. For the four series taken together, the percentage of degenerative conditions of the kidney was 90; while of the total 258 cases there were eight only which showed no degeneration of either kidney or liver.

17. **Tumors of Bladder.**—It is Barney's belief that to get better results in the treatment of bladder tumors, we must see these cases earlier; that in order to see them earlier we must impress on the medical public two points: First, that any hematuria may be a sign of very serious bladder disease; each should be looked on with suspicion until its source and cause are clearly demonstrated. Second, we should combat the idea of the benign nature of bladder tumors. A very large proportion are malignant from the start in that they infiltrate the bladder wall and lead to metastases. Some that are apparently benign in the beginning tend later to infiltrate. Some that do not show any tendency to infiltrate tend to multiply and destroy life by hemorrhage, sepsis and interference with the renal function. Until our knowledge of these tumors is greater we are taking too great a risk in assuming that any given bladder tumor is clinically benign, though we have reason to believe that a few probably are.

In Barney's opinion, the only proper treatment for tumors of the bladder is their early and complete removal. In most instances he believes this should be by excision.

Bulletin of Johns Hopkins Hospital, Baltimore

March, XXIV, No. 265, pp. 69-102

21 *Historic Evolution of Variolation. A. C. Klebs, Lausanne, Switzerland.
22 Trypanosomiasis. G. H. F. Nuttall, Baltimore.
23 Children's Hospital, the Medical School and the Public. L. E. Holt, New York.

21. **Historic Evolution of Variolation.**—Variolation, Klebs says, called forth a unique and extensive trial of a specific preventive method, the logical consequence of which was vaccination. It is difficult to ascertain any one locality where variolation was first practiced. From its wide distribution it would seem that it arose spontaneously in various places where the need for it occurred. The earliest alleged reference to variolation in the chronicles of the sixth century by Marius, Bishop of Avenches, Klebs has been unable to verify. He found only the well known report of a deadly epidemic (570 and 571 A. D.) in Italy and Gaul of a disease which for the first time is called "variola."

The first authentic reports of this practice are found in the Ephemerides of the Academia Cesarea Leopoldino-Carolina published at Leipzig between 1670 and 1705. Here Dr. Vollgnad of Breslau in 1671 and Dr. Schultz of Thorn in 1677 clearly report instances of the custom of "buying the small-pox." There is, however, no reference made to the actual inoculation with the pock scabs purchased in the plague house, but that such was done is very likely, since Schultz speaks of the rather serious illness which his own brother acquired in this manner. Further reports of the ancient practice all date from the time of the medical introduction of variolation to Europe and America. The earliest traces of variolation are found in Asia and in Africa. In Africa the practice continues to this day among certain tribes, chiefly negroes, in the eastern, central and western regions. In India a similar method seems to have been carried out on a systematic plan by special delegates of the Brahmin caste in conjunction with a religious cult of the small-pox deity.

In 1717, the wife of the British Ambassador to Constantinople caused the inoculation of her 3-year-old son and influenced that of the three children of the Secretary to the French Embassy. Other medical men in England at this time had some personal knowledge of the method which they had seen practiced in Constantinople. Actual inoculations very probably were practiced in Paris at about this time by a Greek physician Garazza. Eller successfully inoculated a child in or before 1720. From the time of its introduction to the Occident in 1713 to the advent of vaccination in 1708 and its general acceptance in 1840, variolation does not follow a course of steady progress. It enjoys a few years of the success of novelty (until 1727), followed by twenty years (1746) of indifference, after which it slowly gives rise to a remarkable period of serious scientific investigation.

The technic meanwhile had seen considerable deviations from its primitive Greek prototype. In Constantinople, Maitland had already replaced the dirty needle of the woman operator by the lancet. Nettleton, who probably had the largest experience in these early years, thought it important to make rather deep incisions and to keep them open so that the wound would drain freely and allow the morbid humors to escape. The arms

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or thighs were the favorite regions chosen. The virus was taken directly from a small-pox patient and transferred, or it was collected on threads and dried for later use. It seems that the inoculations were not often performed by the physicians themselves; they usually had a surgeon do it and watched the case before and after. Thus a type of inoculation specialist was evolved and all sorts of people took it up as a lucrative profession. Klebs continues to trace the course of this procedure through to the present day, giving many valuable data collected from over 600 bibliographic references. Concluding he says:

Plentiful suggestions are to be found everywhere which lead one to infer that variolation, without the advent of vaccination, might have furnished the world with an equally safe and perhaps more efficient method of preventive immunization. We have every reason, however, to be satisfied with the results of vaccination. Thanks to it, small-pox has been practically stricken off the list of the great medical problems. None the less it is time that the epoch which preceded vaccination should receive its proper place in the history of medicine and that the names of Kirkpatrick, Gatti, Watson, Mudge and Dimsdale should be recalled with that of Edward Jenner.

Georgia Medical Association Journal, Augusta

February, II, No. 10, pp. 313-344

24 Importance of Ophthalmoscope in Pregnancy. D. Roy, Atlanta.
25 Curettage of Pharynx in Adults. M. M. Stapler, Macon.
26 Extirpation of Lacrimyal Sac in Chronic Dacryocystitis. F. P. Calhoun, Atlanta.
27 Follicular Conjunctivitis: Its Relation to Adenoids. T. E. Oertel, Augusta.
28 Nose and Throat Reflexes Causing Cough. R. R. Daly, Atlanta.
29 Importance of Preserving Integrity of Contiguous Structures When Operating on Tonsils. C. M. Harris, Johnstown, Pa.
30 Eight Years of Chloroform Anesthesia in Nose and Throat Surgery. C. P. Grayson, Philadelphia.

Journal of Nervous and Mental Disease, Lancaster, Pa.

February, XL, No. 2, pp. 73-142

31 *Examination of Ductless Glands in Eight Cases of Dementia Praecox. F. X. Dercum and A. G. Ellis, Philadelphia.
32 *Segmental Distribution of Spinal Root Nucleus of Trigeminal Nerve. A. H. Woods, Philadelphia.
33 Theoretic Considerations of Function of Node of Ranvier. W. Timme, New York.
34 A New Esthesiometer. S. Auerbach, Frankfort-on-Main, Germany.

31. **Ductless Glands in Dementia Praecox.**—A large number of cases were studied clinically by Dercum in the department of insane of the Philadelphia General Hospital. Of these eight subsequently came to autopsy. All eight dementia praecox patients had tuberculosis, seven of them advanced ulceration of the lungs, one extensive tuberculous peritonitis and multiple fistulas of the hip and abdominal wall. One of the most notable points in the ductless gland findings is the underweight of the thyroid in seven of the eight cases. In addition three of them showed abnormalities in the colloid, quantitative or qualitative, and four decided regressive changes in the acinar epithelial cells. The parathyroid findings are not of significance. This applies also to the carotid and thymus. The most constant adrenal picture is the small amount of fat in the cells of the cortex, especially those of the fasciculata. If this is to be regarded as indicative of functional change, it indicates lessened activity. In the hypophyses there is less colloid than is usually found in a series of these glands, but so little is known regarding the morphologic attributes of function in this body that this, as well as the number of eosinophil cells, can hardly be regarded as pathologic. The condition of other organs, as the presence of chronic nephritis in most of the cases, can probably be safely attributed to the tuberculosis.

The authors point out that it is rather a remarkable fact that the almost universal cause of death in dementia praecox is tuberculosis and if the feebleness of resistance to the tubercle bacillus is due to a fault of the adrenal system, there is reason to infer that this fault preexisted and that it is one of the factors in the makeup—the morphology—of dementia praecox. The conclusion is, of course, not justified that an abnormality of the adrenal system is the cause of the mental symptoms of dementia praecox, but our findings are at least in keeping with the inference that anomalies of the ductless glands exist in dementia praecox. The relation between such anomalies and the mental symptoms must remain an open question, but that the facts are most suggestive must be admitted, and for this reason the authors present their material in the form of a preliminary communication.

32. **Segmental Distribution of Trigeminal Nerve.**—It is believed by Woods as probable that touch and pressure sensations are conducted to the Gasserian ganglion, pass to new axones, enter the sensory root and go directly into the chief trigeminal nucleus. Thence new axones conduct them to higher levels, across the raphe and into the lemniscus. And that pain and temperature sensation pass from the ganglion, also along secondary axones, go through the sensory root down within the "spinal root" to the nucleus of that root. Thence new axones pass cephalad within the formatio reticularis, decussate and finally reach the lemniscus. Two cases are cited.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, IV, No. 3, pp. 167-250

35 *Anaphylactic Reaction of Plain Muscle in Guinea-Pig. H. H. Dale, Herne Hill, London.
36 *Congenital Tolerance of Rat to Strophanthus. J. A. Gunn, London.
37 Mode of Union Between Amanita-Hemolysin and Its Anti-hemolysin. W. W. Ford and E. M. Rockwood, Baltimore.
38 Amanita-Toxin. W. W. Ford and E. Bronson, Baltimore.
39 Action of Histamin on Surviving Arteries. H. G. Barbour, Baltimore.

35. **Anaphylactic Reaction of Plain Muscle.**—Dale summarizes his findings as follows: Plain muscle from an anaphylactic guinea-pig, freed from all traces of blood and serum, has a very high degree of sensitiveness to the specific sensitizing protein. The plain muscle of the virgin uterus is especially suited to the demonstration of the condition, and exhibits a definite rise of tonus in response to extreme dilutions of the antigen. The effect is practically immediate, i. e., the delay is not obviously more than can be attributed to the method of application of the antigen. The response is not a mere exaggeration of the reaction which normal plain muscle gives to fresh serums in general.

Preparations of purified protein can be obtained (e. g., serum globulin precipitated by Gibson's method, or egg-albumin crystallized by Hopkin's method), which have no effect on the normal plain muscle, but are as toxic for the anaphylactic plain muscle as the native proteins. One dose of the specific antigen, in sufficient concentration to produce "maximal" response of the anaphylactic plain muscle, completely desensitizes the latter to further doses of any dimensions, provided that the experiment is not complicated by the use of an antigen preparation of normal toxicity. Either normal or anaphylactic plain muscle gives repeated responses to successive large doses of a normally toxic serum or other native protein, but this phenomenon is not anaphylactic response. When sensitizing doses of several antigens are given, a multisensitization of the plain muscle can be demonstrated. Desensitization of the muscle to one antigen is not without effect on its sensitiveness to the others. The washed plain muscle from guinea-pigs immunized to an antigen, by a series of injections, is sensitive to the antigen, like that from anaphylactic pigs. But the sensitiveness is, in this case, less rigidly specific, e. g., plain muscle from a guinea-pig immunized to horse-serum showed a subsidiary sensitiveness to sheep-serum.

The sensitiveness of the washed plain muscle is seen in passive as in active anaphylaxis, whether the serum producing passive sensitization is obtained from sensitive or from immune guinea-pigs. The actively or passively sensitized plain muscle, after being desensitized *in vitro*, can be resensitized *in vitro* by mere contact for some hours with a not too great dilution of sensitive serum. It has not yet been found possible to sensitize normal plain muscle in exactly the same way; but perfusion of a normal uterus for five hours, with diluted serum from sensitive guinea-pigs, produced a decided passive sensitization. The response to the specific antigen of the bronchioles of the anaphylactic guinea-pig is not impaired by excluding the abdominal viscera and the brain from circulation, and is produced with apparently undiminished vigor in the isolated lungs perfused with Ringer's solution.

36. **Tolerance of Rat to Strophanthus.**—The minimum lethal dose by subcutaneous injection of an extract of strophanthus, Gunn found to be thirty times greater for the rat than for the rabbit. A solution of this extract, twenty to forty times stronger, is required to arrest the isolated rat's heart than suffices to arrest the isolated rabbit's heart in the same time. The congenital tolerance of the rat to strophanthus can therefore be explained by the fact that the rat's heart itself is insusceptible to the action of strophanthus. The tolerance of the toad's heart to digitalis-like poisons may be unconnected with the fact that the toad secretes a poison which has a similar cardiac action.

Medical Record, New York

February 22, LXXXIII, No. 8, pp. 323-368

40 *Treatment of Diseases of Vegetable Parasitic Origin by Deep Injections of Mercury. R. L. Wright, U. S. Navy.
41 Suspension Laryngoscopy. W. Freudenthal, New York.
42 *Effects of Beerless Exchange on Morals and Health of Our Soldiers. L. M. Maus, U. S. Army.
43 Paralysis of Recurrent Nerve Due to Circulatory Lesions; Recent Therapeutic Measures. J. W. Gleitsmann, New York.
44 Care of Speech Defectives. E. W. Scripture, New York.
45 *Large Doses of Antitoxin Given Early; Means of Preventing Laryngeal Stenosis. L. Fischer, New York.
46 Etiology of Iritis. G. W. Vandegrift, New York.
47 Plea for Greater Consideration for Opium Addict. C. B. Pearson, Baltimore.

March 1, LXXXIII, No. 9, pp. 369-414

48 Cardiospasm and Idiopathic Dilatation of Esophagus. M. Einhorn, New York.
49 *Tibial Bone Transplantation in Postoperative Mastoid Wound. M. J. Ballin, New York.
50 Jung's Modification of Freudian Theory of Neuroses. S. P. Goodhart, New York.
51 Postoperative Gastroenteric Paralysis. J. T. Pilcher, Brooklyn.
52 Warming Anesthetic Vapors Neither Useless nor Fallacious. R. C. Coburn, New York.
53 Luetin Skin Test in Diagnosis of Syphilis. A. G. Rytina, Baltimore.
54 Occupation as Therapeutic Measure. W. R. Dunton, Towson, Md.
55 Teeth Growing in Nasal Fossa. E. H. Griffin, New York.

40. **Treatment of Diseases of Vegetable Parasitic Origin.**—Cases of typhoid, lymphangitis, bronchopneumonia, furunculosis, gonorrheal cystitis and arthritis, and over forty acute colon bacillus infections were treated by Wright with mercury, which he believes to be the chemical affinity for every vegetable organism. In nearly all these forty cases the disease began suddenly, being ushered in by a mild chill, followed by temperature of an intermittent type, with a daily range from subnormal to 102-103 F. and several times reaching 105 F. The pulse from 85 to 104, being slow in relation to temperature. Headache and painful joints were common. The mentality bright. The white count was low, ranging from 3,000 to 6,000

Three types presented: *Pulmonary*, in which there was severe paroxysmal cough, profuse purulent expectoration, which at times was purulo-sanguineous, associated with severe pains in the involved lung, and at times with inflammation and ulceration of tonsils and pharynx. These cases gave rise to higher temperatures. *Abdominal*, in which there was somewhat obstinate constipation associated with colicky abdominal pain, usually in the gall-bladder region. *Genito-urinary*, in which some part of this tract was involved, giving rise to the usual symptoms produced by an acute inflammatory process of the organ infected.

The organism, an actively motile bacillus, Gram-negative, was found in the urine of every patient, in the blood of sixteen patients examined, in the sputum of pulmonary patients, in tonsillar secretions and exudates, and in the pus from the one subcutaneous abscess noted. Out of five cultures made from the blood specimens of five patients, four were positive for this organism. Numerous cultures from the urines and other fluids and exudates were positive. Mercuric succinimid in doses of 1 to 1½ grains was given in every case.

42. **Effects of Beerless Exchange on Morals and Health of Soldiers.**—Maus says he has watched the effects of alcohol on the mental and physical condition of our officers and men for more than a generation and has never seen one that it has benefited. On the other hand, he has observed its injurious influences on thousands of soldiers, and has known hundreds of officers who were cut down in the prime of life, dismissed or rendered useless and retired on account of drinking. The army of to-day, he says, is abstemious as compared with the drinking army of the canteen days, and anyone who states the contrary is ignorant of its previous history.

The use of any mild form of alcoholic drink leads to the habits of strong drink. Besides, the social environment of the beer club would eventually force the young abstaining recruit to drink. Very few of these men would be able to withstand the influences of the drinking non-commissioned officers and older soldiers. Those who drink use the argument that drinking at the canteen adds to the dividends of the club. With a bar, the post exchange becomes a loafing and drinking place and many of the young soldiers would be forced to drink to escape the taunts and jeers of the drinking element.

In considering the final results, Maus continues, there is little to choose from between beer-drinking Germany, wine-drinking France, ale-drinking England, whisky-drinking Scotland and Ireland, or mixed-drinking America. It is the poisonous agent, alcohol, which is concealed in varying degrees, and not the other constituents of the beverage. The underlying argument of the saloon men is that by governmental sanction of the canteen the government places its stamp of approval on drinking, which would prove of inestimable value to the liquor interests and correspondingly damaging to the temperance movement.

In view of our knowledge of the effects of drinking, he questions whether the government has the right to prohibit the use of alcohol among its public servants, especially among the pensionable class. Admitting that it is the private affair of the ordinary individual who elects to drink, does it not become a governmental affair when a pensionable official not only injures his health thereby, but reduces his efficiency and usefulness? We are living in a progressive and sane age and there is no place in this busy world for the tippler or barroom habitué. If the War Department really desires to improve the condition of the soldier, it should place a premium on temperance through official recognition of the abstaining class. Men are paid for superiority in markmanship, and why not pay for total abstinence, which is the greatest factor of them all in promoting the efficiency of the army and raising its standards? Those who cherish the hope that alcoholism and diseases of vice will vanish some day from the army, should never expect this ideal condition among beer-drinking soldiers.

45. **Preventing Laryngeal Stenosis.**—Four cases are cited by Fischer, a study of which makes it evident that effectual treatment consists in giving a large injection of antitoxin at the beginning of the treatment. In a severe case 10,000 to 20,000 units should be injected at the beginning; whether or no more antitoxin should be injected must depend on the result of the first injection. In all of the cases reported the first injection seemed insufficient, and it does seem that the additional doses help to modify the toxemia. Fischer's rule in intubation and extubation has been: 1. Avoid force; thereby avoid injury. This rule has been his greatest aid in preventing retained tubes. 2. Do not hurry. While in a severe laryngeal stenosis a given amount of haste is necessary in selecting the proper-sized tube and making preparations, but when it comes to the introduction of the tube the inflammatory process and subnormal condition must be remembered; hence, one should go slow. The nervous and frightened child must be quieted, especially when considering extubation. Fischer's rule is to give an antispasmodic for twelve hours preceding the removal of the tube. Codein, one-eighth to one-fourth of a grain, to a child two years old or over, repeated in three hours for four doses, or 10 grain doses of sodium bromid with 2 grains of chloral hydrate, repeated in six hours (two doses only), will allay nervous excitability and have a quieting effect. The antispasmodic should be continued for twenty-four hours after the removal of the tube. The spasm due to fear of the operating table when repeated intubation and extubation are practiced may in rare cases require an inhalation of a few drops of ethyl chlorid prior to extubation. Dover's powder is a valuable drug as an antispasmodic prior to extubation.

Intralaryngeal medication consists in applying a coating of medicated gelatin to each tube. Such medication as orthoform, 10 per cent. in gelatin or ichthyol gelatin, served well in a case of persistent tube, reported seven years ago. Owing to the thickness of the coating of gelatin a tube one size smaller than usual is required. In severe cases of diphtheria it is better to give 10,000 units by hypodermic means. As a rule some benefit should be noted within twelve hours after such treatment. If septic manifestations are evident, especially if the patient has been untreated for many days, the most rapid method of destroying the diphtheritic poison is by injecting into the median basilic vein at least 10,000 to 20,000 units of diphtheria antitoxin.

49. **Tibial Bone Transplantation.**—In three cases Ballin has resorted to bone transplantation in the mastoid wound. The piece of bone used for the transplant is taken from the crest of the patient's tibia. The operation is performed under general anesthesia. The bone, with its periosteum carefully detached, is immersed into warm saline solution, and then is placed into the mastoid wound as quickly as possible in such a manner that its raw surfaces come in contact with the clean granulating surfaces of the mastoid bone itself. The skin is then carefully sutured with the exception of a small orifice in the lower angle, in which is placed a small piece of gutta-percha drain for a few days. The transplanted bone acts as a bridge and on this rests the skin of the mastoid region. The air space below the transplant fills up with a blood-clot, which becomes organized and eventually replaced by new bone from the transplant, so that after a time the cavity becomes obliterated. Ballin does not advocate this procedure as a routine measure, but believes it is of value in cases in which there is a clean granulating wound.

New Mexico Medical Journal, Las Cruces

February, IX, No. 5, pp. 107-134

56 Pernicious Anemia. N. H. Morrison, Los Angeles.
57 Poliomyelitis. M. K. Wylder, Albuquerque.
58 Climate vs. Sanitation. C. T. Sands, Las Cruces.
59 Diagnostic Symptoms Manifested in Eye. W. T. Salmon, Albuquerque.

New York Medical Journal

February 22, XCVII, No. 8, pp. 373-424

60 Diagnostic Significance of Pain in Tabes. A. M. Hamilton.
61 Mortality in Four Thousand Feeble-Minded and Idiots. L. P. Clark and W. L. Stowell, New York.
62 *Contradictory Findings in Wassermann Test. A. L. Wolbarst, New York.
63 Day Camp for Tuberculosis. A. P. Francine, Philadelphia.
64 Maimonides the Physician. M. Kahn, New York.
65 Functional Nervous Conditions. W. V. P. Garretson, New York.
66 Sewage Pollution of Great Lakes. A. J. McLaughlin, Washington, D. C.
67 Colorado Method for Examination and Care of Public School Children. M. E. Bates, Denver.

March 1, XCVII, No. 9, pp. 425-476

68 Essential Features of Symptomatology and Prognosis in Dementia Præcox. F. X. Dercum, Philadelphia.
69 *The Diagnostician. A. Bassler, New York.
70 History of Bloodletting. F. H. Garrison, Washington, D. C.
71 Newer Teachings of Diseases of Gastro-Intestinal Canal. M. I. Knapp, New York.
72 *Family Incidence of Malignant Tumors. G. L. Rohdenburg, New York.
73 Otology from Medical Point of View. H. N. Spencer, St. Louis.
74 Intramural Abscess of Puerperal Uterus. A. H. Harrigan, New York.
75 Strangulated Hernia. H. Goldstein, New York.
76 Chorea. P. H. Markley, Camden, N. J.

62. **Contractions in Wassermann Test.**—Wolbarst emphasized the fact that the Wassermann reaction is dependent for its results on the skill and knowledge of the serologist. The results of the test depend in great measure on the absolutely perfect standardization of the reagents used; these are subject to variation in the hands of different serologists. As a result of these differences, diversity in results is not infrequent, but insufficient attention has hitherto been given to this particular feature of the reaction. He further believes that it is a gross error to accept the findings of one serologist as conclusive, particularly if his result is positive and the diagnosis dependent on his report; his work should be checked up by one or more equally competent workers. If two or more competent serologists report on a given serum, the majority opinion may be accepted as fairly conclusive; frequent reexaminations are always of advantage to the patient. Of thirty-seven cases thus studied by Wolbarst for discrepancies, agreement of findings took place in twenty-six cases (70 per cent.); absolute contradiction of findings took place in five cases (14 per cent.); slight disagreements took place in six cases (16 per cent.). He would have all mention of results of the Wassermann test, in the literature or elsewhere, accompanied by the name of the serologist who made the test, in order that the measure of accuracy and skill employed may be estimated.

69. **The Diagnostician.**—Bassler concludes his paper as follows:

It is plain that advance in medicine in America has reached the point where the gaps should be filled. This, as has been suggested, can be done by bringing all of the various kinds of men to a focus or by improving the knowledge of each of them so that there will be a broader scope—both of which under the conditions that exist in medicine to-day are seemingly impractical. Thus, one of two things is necessary, either that a combination of men interested in the various sides of medicine club together primarily to arrive at diagnoses so that any one of them can cover any scope in the therapy demanded in a case, or that we develop a new department, that, namely, of the diagnostician and consider the specialists as skilled workers in therapy. For this type of man (diagnostician), on whom the future will inevitably shower places, there is now beginning a crying demand. While no one cannot be a Jack of all trades, it is possible for any young man who starts out with the ambition to become a diagnostician to arrive somewhere near the goal. This man must start young, be well grounded in learning, preferably with an academic education, and then a graduate from a good medical school and a hospital with a large and general service. After this he must engage in the work that any large city with its various clinics and constant demand for clinical assistants offers. During this time he must become familiar with all that pertains to diagnosis work in the diseases of skin, eye, ear, nose and throat, neurology, internal medicine, surgery, orthopedics, pediatrics, etc. If he is not over keen about learning all there is to therapeutics, he can in the course of a few years learn his diagnostics well. While engaged in the various clinics in different subjects and under different men, he should be attached to some hospital where he can observe cases under bed observation. If necessary, he can engage in general practice to support himself and help to give him material to examine with all of the various means of doing so he has learned. He would be an excellent general practitioner on the way, who in the course of time will have succeeded well in family practice and will then be ripe for taking up a specialty for definite application. In the selection of this, I would suggest that some such men of to-day take up the specialty of diagnosis, so that when the time comes, as it inevitably will, such men will exist. The people have established the specialists, and the ambition of medical men has followed. In the omissions and commissions seen on the part of different men in the various branches, medicine is now calling for diagnosticians. In the future this want will become greater rather than less, and it will not be many years when the people will demand them. Let us in this instance be progressive enough to see this emergency coming, and have men capable to meet it when it arrives.

72. **Family Incidence of Malignant Tumors.**—The three series of cases cited, Rohdenburg believes, are typical examples of the types described by Behla and others. *Cancer à deux*, so-called house infections, and family transmission are all represented. Where the clinical history as to previous sources of irritation has been carefully inquired for, it has been found. Three families have been observed during the last six years. Mrs. A., aged 50 years, lived in New York in the winter, and at a little town of 500 inhabitants in the southern portion of the state in the summer. Five years before her present trouble her husband had purchased their country home from an estate. The previous owner of the property had died of carcinoma of the stomach, six months after the death of his wife; and she had died of a cancer of the uterus. Five years after Mr. A. had purchased this house as his summer home, his wife, while in a runaway accident, was struck on the left breast. Four months after this accident a carcinoma developed at the site of this bruise. This was followed in three months by another carcinoma of the same type in the opposite breast. Both breasts were amputated. The patient died of a general carcinomatosis three years after the accident.

During the last six months of Mrs. A.'s illness, an epithelioma of the cervix uteri developed in her mother, Mrs. Z., aged 80 years. From this she died in six months, the immediate

cause of death being a profuse hemorrhage. Mrs. Z. had had a severe bilateral laceration of the cervix for over forty years. Shortly after Mrs. A. was operated on for carcinoma of the breast, two of her sons married two sisters of the family H. The H.'s lived seven miles from the A.'s. Four months after the death of Mrs. A., in the father of the H. sisters, developed a sarcoma of the large intestine, in the region of the splenic flexure. Mr. H. had suffered for over fifteen years with obstinate constipation, due in all probability to adhesions following general peritonitis, the peritonitis, in turn, being caused by a perforated appendix. Mrs. Z. lived with Mrs. A., and Mr. H. had frequently been to see both while Mrs. A. was sick. All the patients were at the onset of the illness exceptionally well nourished.

The family W. furnishes the second series of cases. In Mr. W., aged 52, developed a carcinoma of the large intestine. Previous to this time he had suffered for years from what was termed a "nervous diarrhea." He died one year after a palliative operation. Four months after his death, Mrs. W. had an epithelioma of the breast. For fifteen years she had at the site of the malignant tumor formation a small wart. As soon as she heard the diagnosis in the case of her husband, on the advice of a nurse, she applied sodium ethylate to the wart. Instead of disappearing the wart commenced to grow, at first slowly, and then more rapidly. The affected area was excised and the diagnosis confirmed microscopically.

The third series of cases occurred in family P. Mr. P., aged 45 years, furnished the following history: He married at the age of 20 years. Two years after marriage his wife showed cancer of the breast, from which she subsequently died. He then married his wife's sister, and she, five years after her marriage, also had a cancer of the breast. After the death of his second wife he remained single for seven years and two years ago married for the third time a widow, aged 42. The present Mrs. P. presented what was clinically a carcinoma of the breast. This diagnosis was later confirmed by operation and microscopic examination. On very close questioning Mr. P. admitted sexual abnormalities. He stated that he could obtain sexual gratification only by biting his partner and that the site of election was the breast. He seldom bit so as to draw blood, but often caused subcutaneous hemorrhages, slight in amount. In brief he repeatedly contused the breast tissues.

Ohio State Medical Journal, Columbus

February 15, IX, No. 2, pp. 53-104

77 Value of Cystoscopy in Diagnosis of Renal Tuberculosis. F. C. Herrick, Cleveland.
78 *Influence of Nose on Pulmonary Rales. L. C. Grosh, Toledo.
79 Operative Management of Compound Fractures. B. F. Barnes, Newark.
80 Some Advantages in Using Two Ends of a Suture. M. D. Stevenson, Akron.
81 Intravenous Administrations of Sublimate, Hyrgolum, Oxycyanid and Sublamin in Salvarsan Relapses. M. L. Heidingsfeld, Cincinnati.
82 Municipal Control of Milk Supply of Ohio. C. F. Tenney, Toledo.
83 Value of Roentgen Ray in Diagnosis of Gastro-Intestinal Lesions. H. J. Means, Columbus.

78. Abstracted in THE JOURNAL, May 18, 1912, p. 1534.

Pennsylvania Medical Journal, Athens

February, XVI, No. 5, pp. 337-420

84 Dietetics and Policing of Camps. H. A. Arnold, Ardmore.
85 Functional Psychoses of Senile Period. A. C. Buckley, Philadelphia.
86 Desiccation Process of Tissue Destruction as Applied to Certain Pathologic Conditions. W. L. Clark, Philadelphia.
87 Early Paralysis. A. Gordon, Philadelphia.
88 *Treatment of Inguinal Hernia in Children. E. W. Meredith, Pittsburgh.
89 Operative Technic of Strangulated Hernia. J. D. Singley, Pittsburgh.
90 Department of Health's Activity in Handling Tuberculosis in Pennsylvania. B. F. Royer, Harrisburg.
91 Scintillating Scotomata Associated with Migraine. L. C. Peter, Philadelphia.
92 Observations on 103 Consecutive Operations on Thyroid. W. D. Hamilton, Columbus, O.

88. Abstracted in THE JOURNAL, Nov. 2, 1912, p. 1647.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

February, X, No. 110, pp. 49-96

1 *Treatment of Acute Abdominal Cases in Children. P. L. Mummery.
2 Flagellate Dysentery in Children. Mello-Leitao.
3 *Fatal Hemorrhage from Throat. J. D. Rolleston.

1. **Treatment of Acute Abdominal Cases.**—Mummery discusses intussusception, acute appendicitis and acute obstruction, reviewing the clinical history and differential diagnosis of each. He insists on the importance of regarding all acute abdominal symptoms in children as requiring the most serious consideration; and, where a serious intra-abdominal lesion is diagnosed or suspected, on the necessity for operating as soon as possible.

3. **Fatal Hemorrhage from Throat.**—A girl, aged 6 years, was admitted to hospital, certified to be suffering from diphtheria. Beyond an attack of whooping-cough at the age of 3 years she had until recently been a healthy child and there was no family history of bleeding. Five weeks before admission she had had measles, since when her voice had been husky. She complained of sore throat, and had a croupy cough and the neck glands became swollen. At 9 a. m. the fifth day, she suddenly gave a cough and a huge gush of blood poured out of the mouth. Death preceded by marked cyanosis occurred within five minutes. No diphtheria bacilli but only cocci were found in three successive cultures from the throat and one from the nose. Necropsy: Abscess cavities in both tonsils, ulceration of the uvula, soft palate, epiglottis, frenum epiglottidis, vallecula and ary-epiglottidean folds. Deep ulceration of laryngeal portion of pharynx exposing muscular tissue. Three small superficial ulcers above right vocal cord. The exact site of the bleeding vessel was not determined, but there was no evidence of erosion of external carotid, internal carotid or internal jugular, nor of any glandular abscess.

British Medical Journal, London

February 15, 1, No. 2726, pp. 321-372

4 Appendicitis: Plea for Immediate Operation. E. Owen.
5 Function of Appendix and Origin of Appendicitis. E. M. Corner.
6 Carcinoma of Colon. J. Cunning.
7 *Results of Excision of Hip-Joint in Thirty-Four Cases of Suppurating Tuberculous Disease. C. A. Morton.
8 Fifty-Five Cases of Suprapubic Prostatectomy, with Four Deaths. A. Fullerton.
9 Rheumatoid Arthritis. F. G. Thomson.
10 *Acute Pneumonia During Treatment with Arsenic. F. P. Weber.
11 Three Cases in Midwifery Practice. J. Reid.

7. **Excision of Hip-Joint for Tuberculous Disease.**—All of Morton's operations have been performed by the anterior incision, which starts just below the anterior superior spine and runs downward, passing between the sartorius and the tensor fasciae femoris, and then between the rectus and gluteus minimus. All cases were drained, but within two months in most cases all discharge ceased and the wounds healed. This is more than one can expect if only the abscess sac is dealt with, and is, he thinks, the great advantage of excision as compared with methods in which the abscess alone is dealt with. In nearly all cases flexion to a right angle was possible, but lateral movement was not usually as good as flexion, and in some cases was quite limited, but in one of the cases movement was almost perfect in all directions. Shortening was usually present to the extent of 2 to 2½ in. in cases seen some years after the operation, but may not be more than 1 in. for some time after the operation. In one case it was 4 in. nine years after the operation, the position of the trochanter indicating how the stump of the neck had become forced up on the dorsum ilii.

In some cases the limp was slight, but in others, some years after the operation, it was marked, even when the shortening had been compensated for by extra thickness of the sole of the boot. There seemed to be a marked want of stability about the joint. But even in these cases the patient could walk a considerable distance. In some of the cases with more stable joints they could walk many miles, and one boy

was said to be able to climb trees just like other boys. Morton cannot say whether the range of movement is as good after recovery when simply the abscess is dealt with and the head of the bone is not removed, because in the only two cases in which he did not remove the head (the two cases of arthrectomy) he did not see the patients years after; but he would not expect as good a range of movement. In one of the cases deformity recurred eight years after operation and was removed by weight extension. There was no recurrence of the disease. Recurrent deformity was rarely present in his series.

10. **Acute Pneumonia During Treatment with Arsenic.**—In a few cases Weber observed the sudden occurrence of pneumonia in children while they were undergoing arsenical therapy on account of lymphadenoma or some other disease. He believes that the association was no chance one, but that the pneumonia was in some way dependent on the taking of arsenic, as is arsenical herpes zoster. Two of the patients likewise had attacks of arsenical herpes zoster. The rapid recovery from the lung disease was another striking feature. The patients were young, and the recovery from the pneumonia was excellent, even when the general condition was extremely bad. There was little in the way o distressing cough or pain. Weber believes that arsenic may possibly predispose some persons to an attack of (? pneumococcal) pneumonia, just as it is acknowledged to predispose some individuals to an attack of herpes zoster, which is, perhaps, like pneumonia, a disease of infectious (microbic) origin.

Clinical Journal, London

January 29, XLI, No. 17, pp. 257-272

12 Lister's Work and Teaching. W. W. Cheyne.
13 *Treatment of Fractures of Lower End of Humerus. G. Simpson.

February 5, XLI, No. 18, pp. 273-288

14 Case of Anemia of Pernicious Type with Acholuric Jaundice. F. J. Poynton and H. C. D. Pedler.
15 Treatment of Club-Foot in Early Childhood. A. S. B. Bankart.

February 12, XLI, No. 19, pp. 289-304

16 Chronic Intestinal Stasis. W. A. Lane.

13. **Treatment of Fractures of Lower End of Humerus.**—The plan Simpson adopts is to have a skiagram taken, then give an anesthetic and reduce the fracture; bandage the arm up in acute flexion and then have another skiagram taken to see that the reduction is satisfactory. After ten days he takes off the bandage and lets the arm come down to a right angle and fixes it in that position. He looks at the elbow every other day and puts it up each time at a different angle. Finally, on the twentieth day, he leaves off the bandage and lets the patient do what he likes with the arm. All that is needed is a piece of lint, some chloroform (or, better still, some ether), a mouth-gag and tongue-forceps, some cotton-wool, a bandage and some common sense. Giving an anesthetic is, he thinks, the essential point in the treatment. As a matter of fact, even with complete relaxation of the muscles and with plenty of time, considerable difficulty may be met in effecting reduction. Passive movements in these cases he regards as being not only useless, but they delay recovery of movement. Massage is harmful in the early stages, and should only be used after movement has returned. Interference with the circulation is always liable to occur if a swollen arm is flexed.

Journal of Laryngology, Rhinology and Otology, London

February, XXVIII, No. 2, pp. 57-112

17 *Nerve-Supply of Inferior Turbinal as Shown by Vital Staining. T. W. E. Ross.
18 Report for Year 1912 from the Ear and Throat Department of the Royal Infirmary, Edinburgh. Part I. Analyses of Seventy-Six Consecutive Operations on Frontal, Maxillary, Ethmoidal and Sphenoidal Sinuses. J. S. Fraser and R. Verel.
19 Diffuse Osteomyelitis from Nasal Sinus Suppuration. D. McKenzie.

17. **Nerve Supply of Inferior Turbinal.**—From the facts stated by Ross, it is obvious that the inferior turbinals have an abundant and complex nerve supply. The complexity is greatest in the subepithelial layer. Here several varieties of nerve ending are found, the most striking of which is the plexus formed by leashes of nerve-fibrils, best seen toward the anterior portion of the turbinal. The medullated fibers seem principally destined to end in the epithelium, but those which do generally give off fibrils to capillaries and other structures in the subepithelial layer. Some medullated fibers end in the subepithelial layer, their ultimate fibrils going to form the wide-meshed plexus already described. The nerve supply of the subepithelial capillaries is very rich. Fibrils pass to them from both varieties of fiber, and also from the terminal plexuses of fibrils.

Lancet, London

February 15, I, No. 4668, pp. 435-506

20 *Paths of Infection in Genito-Urinary Tuberculosis. K. M. Walker.
21 Appendicitis; Plea for Immediate Operation. E. Owen.
22 *Remote Results of Tonsillotomy and Tonsillectomy. H. Whale.
23 Operation for Hypospadias. A. Edmunds.
24 *Case of Addison's Disease in Boy Aged 10 Years. F. Langmead.
25 *Polycystic Disease of Kidneys. H. Rischbieth and C. P. C. De Crespigny.
26 Chronic Internal Hydrocephalus. J. Rae.
27 Action of Scharlach R on Roentgenized Skin. J. O. W. Barratt.

20. **Paths of Infection in Genito-Urinary Tuberculosis.**—Speaking of tuberculosis of the testicle, Walker says that infection takes place, as in gonorrhea, by means of the cord and not by the blood-stream. That cases of hematogenous infection occur cannot be denied, but they are few in number. The evidence in favor of the frequent occurrence of a descending genital tuberculosis is tabulated as follows: Clinical evidence: 1. It is extremely rare to find tubercle of the epididymis without discovering some indication of disease of the prostate or the vesicles. 2. Prostatic tubercle is not infrequently found without any lesion of the testicle. 3. The appearance of a tuberculous epididymitis is often preceded by symptoms of prostatitis or vesiculitis—the so-called prodromata of tuberculous epididymitis. 4. The earliest signs of tuberculous disease are found at the lower pole of the epididymis. This is the first position which opposes the line of march of the invading organisms. 5. Tuberculous disease of the testicle is analogous to acute infections which are known to have been produced by extension from the urethra. The ordinary type of tuberculous epididymitis has no analogy to the hematogenous orchitis of mumps. Pathologic evidence: 1. Lesions of the testicle without disease of the prostate are rare, whereas tuberculous lesions of the prostate are not infrequently found unaccompanied by disease of the testicle. 2. When tubercle of the testicle is found in association with tubercle of the prostate, the lesions in the prostate generally have the appearance of being older than the lesions in the epididymis. 3. Tuberculous nodules in the lower pole of the epididymis usually appear older than those in the upper pole. They are the first to soften and break down. Experimental evidence: 1. Microorganisms and inanimate granules are rapidly absorbed from the urethra and carried to the testicle. 2. A tuberculous epididymitis may be experimentally obtained by inoculating the urethra after having damaged one of the testicles.

22. **Results of Tonsillotomy and Tonsillectomy.**—The disadvantages of tonsillotomy, according to Whale, are: 1. The initiation of an infection, whether manifesting itself as tonsillitis, lymphadenitis, or both. Such sequelae are more likely if a very free and deep removal has been performed than if only a moderate amount of the tonsil has been removed. 2. Recurrence of the trouble for which the operation was performed, except in the case of voice troubles, when recurrence is no more probable than after tonsillectomy. The disadvantages of tonsillectomy are: 1. A risk of serious or even dangerous hemorrhage at operation. 2. A risk of harmful deformity supervening later; the deformities most likely to cause harm are adhesion of the posterior faucial pillar to the posterior pharyngeal wall, and overgrowth of the plica triangularis. 3. A risk of voice troubles supervening later, even without any causative deformity. To any patient who requires operation for some other reason, who has never had any voice trouble, and whose livelihood or occupation depends on the use of the voice, tonsillectomy should be urged with caution. Thus it would appear that tonsillectomy is the more dangerous operation. But with the single exception of voice troubles, it is more likely permanently to cure the complaint for which advice

is sought; notably so in the case of tonsillitis or lymphadenitis; moreover these two infections are never initiated by tonsillectomy. It is important to eradicate the lower pole.

24. **Addison's Disease in Boy.**—An especially interesting feature of this case was the small size of the heart, which weighed only 3 ounces.

25. **Polycystic Disease of Kidneys.**—The points of interest in the first case were: In Case 1: (a) The age, 26 years, at which the condition first became manifest. If this condition was congenital in origin, as is to some extent suggested by the fact that this patient showed what appeared to be a congenital abnormality of the heart as well, it is perhaps remarkable that kidneys of this size and degree of cystic degeneration should not have caused symptoms, renal or other, earlier in life. (b) That the first symptom produced was intestinal obstruction; this, however, is not very surprising, considering the size to which these tumors had attained. (c) That one kidney of the type here shown should be capable of maintaining the renal functions and warding off symptoms of renal insufficiency for some six years and maintaining perfect health. This individual was passed for life insurance having only one kidney, and that polycystic, and appeared to be in good health up to the time that one of the complications of otitis media carried him off. (d) Again, the age is peculiar when statistics of published cases are considered, for patients affected are usually very old or very young.

The points of interest in the second case are summarized as follows: (a) The age, 62 years, to which this individual attained with kidneys such as those shown without suffering symptoms suggestive of renal disease. This, however, is not uncommon in this connection. (b) The problem, was the acute colitis from which this man died a terminal infection in a chronic uremic state, or an independent condition? For the evidence of uremia was very slight. (c) The possible part played by gout in the causation of the polycystic degeneration of the kidneys in this case. That is to say, Are we dealing with a congenital condition in a man, aged 62 years, the result, let us say, of embryonic failure of union between secreting and conducting parts of the kidney (which has, however, given rise to no symptoms for so many years)? Or is the condition acquired, the effect of, let us say, fibrous proliferation around the tubules, exudation into them, or cicatrization after nephritis, causing obstruction of the urinary passage (as Morris suggests), and possibly in this case the effect of gout? Any of these causes might cause a polycystic condition such as these kidneys show. (d) If the acute colitis from which this man died was a terminal infection in a uremic state, are we to regard the latter as that of the last stage of polycystic disease or degeneration of the kidney? Or is it to be considered as that of chronic interstitial nephritis, of possibly gouty origin, affecting a kidney already polycystic? (e) Or is the condition, *in toto*, one of polycystic degeneration of a granular kidney? There is no note of the condition of the urine. But since the urine may have much the same characters in all the above conditions, its diagnostic value here would not be great. These kidneys show little indication of chronic interstitial nephritis in fibrotic changes, and do not resemble any specimens of cystic glandular kidney that one has seen. Further, the arteries are rather small, very little thickened, and not atheromatous. The hypertrophy of the left ventricle was very slight, arterial tension not very markedly increased, and the degree of atheroma and arterial degeneration that was present not more than would be fairly often seen without symptoms in an individual of this age who, like this man, had been a manual laborer all his life. Therefore the hypothesis that chronic interstitial changes, the effect of gout, may have played a leading part in the causation of the polycystic disease of these kidneys must be abandoned. They would seem to be examples of "polycystic degeneration," whether they be congenital or not.

Medical Press and Circular, London

January 29, XCV, No. 3847, pp. 109-136

28 Surgical Methods of Dealing with Eclampsia. J. H. Croom.
29 Present Position of Dermatology. D. Walsh.
30 Transverse Incision in Laparotomy. A. J. Wallace.
31 Neurology of Visual System. (To be continued.) H. Campbell.

February 5, XCV, No. 3848, pp. 137-164

32 Diagnosis of Early Pulmonary Tuberculosis. A. J. Whiting.
33 Neurology of Visual System. H. Campbell.
34 Diagnosis of Causes of Chronic Recurrent Abdominal Pain. J. O. Symes.
35 Pituitary Extract in Obstetrics. W. J. Gousew.

February 12, XCV, No. 3849, pp. 165-188

36 Scientific Basis of Organotherapeutics. A. Münzer.
37 Sanatorium Benefit in Ireland. R. J. Rowlette.
38 Ultramicroscopic Organisms in Disease. E. A. Cockayne.

Annales de l'Institut Pasteur, Paris

December, XXVI, No. 12, pp. 937-1044

39 Contagious Agalactia in Sheep and Goats. Epizootic Causing Severe Lesions in Udders, Eyes and Joints. (L'agalaxie contagieuse de la brébis et de la chèvre.) H. Carré.
40 Negri Bodies in Rabies. (Etude des corpuscles de Négri et des formations spéciales à la rage à virus fixe.) Y. Manouelian.
41 Inhibiting Action of Carbon Dioxid on Hemolysis and Bacteriolysis. Sawtschenko.
42 Potassium and Sodium in Living Tissues. (Etude de potassium et du sodium chez les animaux.) P. J. Gérard.
43 *The Manganese Normally in the Blood. G. Bertrand and F. Medigreceanu.
44 Technic for Preservation of Soluble Toxins: No Impairment of Properties After Seven Years and Four Years. Nicolle and C. Truche.

43. **Manganese in the Blood.**—Reviewed editorially in THE JOURNAL, March 1, p. 674.

Archives Générales de Chirurgie, Paris

January, VII, No. 1, pp. 1-128

45 Congenital Malformations of the Neck; Five Cases. (Les formations branchiogènes du cou.) L. Delrez.
46 *Operative Treatment of Meningeal Hemorrhage in the Newly Born. (Etiologie, symptomes et traitement chirurgical des hémorrhagies meningées du nouveau-né.) J. Doazan.
47 Felon from Infection with Hog Cholera. (Panaris superficiel par le bacille du rouget du porc.) P. Mauclaire.

46. **Meningeal Hemorrhage in the Newly Born.**—Doazan advocates lumbar puncture at once on suspicion of meningeal hemorrhage in a new-born babe. If this fails to relieve, the anterior fontanel should be punctured if it is bulging. After this it would be better to wait for the brain to develop more resisting power before attempting an actual operation to relieve pressure on the brain. Gilles of Toulouse prefers to puncture the fontanel at once, before doing even lumbar puncture, introducing the Pravaz needle, as far from the longitudinal sinus as possible, to a depth of 5 mm. or even 8. This draws the blood at once before it has had time to clot or be absorbed. Puncture of the fontanel is naturally merely an exploratory intervention, but it may have actual curative value as in a case reported by Gilles last July.

In prophylaxis all causes liable to increase the blood-pressure in the infant's brain should be carefully guarded against. Doazan gives the details of six cases from the literature not including Cushing's experiences. Four of the children developed apparently normal thereafter. In Gilles' case lumbar puncture was negative and he then punctured the bulging fontanel, withdrawing 2 c.c. of blood and about an equal amount on repetition of the puncture at two other points in the fontanel. The child's condition was satisfactory until the age of 9 months when it died after having had several convulsions. Simmons' little patient has developed quite normally since the extensive decompressive operation which released a large amount of black blood. Lumbar puncture had been negative and the fontanels were not distended. Another child relieved by the operation died from enteritis at 9 months. Doazan does not seem to have any personal experiences of the kind to relate.

Archives Générales de Médecine, Paris

January, XCII, No. 1, pp. 1-96

48 The New Bacteriology of Tuberculosis in Relation to Its Diagnosis, Treatment and Immunization Against the Disease. J. Ferran.

Archives des Maladies de l'App. Digestif, Paris

December, VI, No. 12, pp. 661-719

49 *Case of Renal Diabetes. G. Roque and J. Challer.
50 Case of Recurring Catarrhal Jaundice with Positive Tests for Typhoid. (Pneumotyphus hépatique éberthien à repetition.) G. Etienne.

51 Jejunocolic Fistula from Peptic Ulcer in Jejunum After Gastro-Enterostomy. Urrutia.

January, VII, No. 1, pp. 1-69

52 *Influence of Different Diets in Diabetes. M. Labbé and H. Bith.

53 Coprologic Localization of Source of Diarrhea. R. Goeffon.

54 Multiple Ulcerations and Perforations of the Small Intestine and Cecum from Postoperative Intestinal Toxi-Infection. G. de Rouville and H. Roger.

49. **Renal Diabetes.**—The patient in the case described is a man of 45 who has had polyuria constantly for fourteen years. Under the influence of alcoholic excesses, transient albuminuria develops, and during the last six years there has been also transient glycosuria with hyperglycemia. After a few weeks of rest and dieting both sugar and albumin disappear from the urine. With care the man may escape serious trouble, but if he persists in his drinking habits, the kidney lesions responsible for the albuminuria and glycosuria will probably become chronic and may entail uremia. But he will not have the usual complications of true diabetes, as his blood is free from sugar.

52. **Diet in Diabetes.**—Labbé and Bith report careful research on two well nourished diabetics and on eight losing flesh and with more or less acidosis, four of whom have died since in coma. In diabetics with denutrition and acidosis the indications are to combat (1) the hyperglycemia, (2) the loss of nitrogen, and (3) the acid intoxication. For the first the intake of carbohydrates should be restricted; for the second, the diet should be rich in nitrogen, and for the third indication the diet should be poor in meat and rich in carbohydrates. Labbé and Bith believe that these antagonistic indications are best met by varying the diet to fit the predominating symptoms at the time. As a rule, the aim is to keep the hyperglycemia in tolerable limits, but when acidosis menaces a vegetable diet should be promptly instituted. They have found it a good plan to allow a week of mixed diet; then three days' restriction to milk; then a week of mixed diet; then three days of oatmeal; then a week of mixed diet; then three days of soft mashed vegetables, etc. The best way is not to be too absolute but be guided by conditions as they develop and by the urine findings. Their experience has been that dry vegetables are as effectual if not more so than the oatmeal cure.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

January, II, No. 1, pp. 1-112

55 Radium Therapy for Uterine Fibromas; Technic and Results in 193 Cases. H. Chéron.

56 Passage of Carbon Dioxid from Mother to Fetus. (Mécanisme du passage de l'oxyde de carbone de la mère au foetus et des respirations placentaire et tissulaire.) M. Nicloux.

57 Therapeutic Abortion from Forensic Standpoint. (L'avortement thérapeutique et la loi.) L. Tissier.

58 Maternity Benefit Laws. (La loi sur le repos des femmes en couches au Sénat.) L. Devraigne. (Le "Maternity Benefit" d'Angleterre. Ses conséquences sur l'enseignement et la pratique de l'obstétrique en Ecosse.) M. Vaudescal.

Bulletin de l'Académie de Médecine, Paris

January 28, LXXVII, No. 4, pp. 73-77

59 Mineral Elements in Cancer of the Liver. (Recherches sur la composition chimique du cancer du foie.) A. Robin.

60 Research on Variola Vaccine. R. Wurtz and Others.

Bulletins de la Société de Pédiatrie, Paris

January, XV, No. 1, pp. 1-38

61 *Prophylaxis of Contagious Diseases in Infant Wards. (La défense contre les maladies contagieuses à l'asile de débiles de Médan.) H. Méry and Malhéné.

62 Familial Recurring Dislocation of the Patella. (Un cas de luxation récidivante de la rotule.) M. Wilbouchewitch.

63 Desiccated Milk. (Essai sur la valeur alibile du lait desséché.) G. Variot and Others.

64 Inefficiency of Rectal Serotherapy. (Inefficacité de la sérothérapie par voie rectale.) E. Lesné and L. Dreyfus.

61. **Necessity for Better Prophylaxis of Contagious Diseases.**—Measles seems to be the gravest danger in foundlings' homes and similar institutions. Among the 200 children less than 2 years old at the Médan asylum for convalescent infants, measles caused 11.5 of the total mortality in the last three years. Without this the mortality would have been only 5 per cent.

Journal de Médecine de Bordeaux

February 9, XLIII, No. 6, pp. 83-96

65 *Ischemic Paralysis. (Paralysies du membre supérieur après emploi de la bande d'Esmarch.) P. Abadie and Desquey-roux.

66 Anatomy of Sinus Cavernosus. (Note sur la constitution des parois du sinus caverneux et les rapports des nerfs oculo-moteurs et trijumeau avec ses parois externe et supérieure.) M. Ferron.

65. **Ischemic Paralysis.**—A robust young woman free from nervous troubles or infectious disease cut her finger and required a minor operation; the blood was expelled with the hemostatic bandage on the lower third of her arm. Flaccid paralysis followed, involving all the muscles of the forearm and hand with slight atrophy of the muscles. Under electricity and massage the paralysis began to improve after five weeks and complete recovery is anticipated now by the approaching end of the fifth month.

Lyon Chirurgical, Lyons

February, IX, No. 2, pp. 97-232

67 Present Status of Resection of Spinal Roots. (Indications et résultats de la résection des racines postérieures.) O. Foerster.

68 Resection of Joints Without Drainage. E. Villard and L. Tavernier.

69 Serodiagnosis of Cancer. (Séro-diagnostic des tumeurs malignes—Réaction de von Dungern.) P. A. Petridis.

70 Cancer of the Rectum. (Résultats immédiats et éloignés de l'opération combinée dans le cancer du rectum.) A. Chalier and E. Ferrin. To be continued.

71 Experimental Research on Operative Treatment of Acute Nephritis from Mercurial Poisoning. P. Mazel and J. Murard. Commenced in No. 1.

Presse Médicale, Paris

February 1, XXI, No. 10, pp. 89-100

72 Elementary Lesions in the Lungs. (Introduction à l'étude histo-pathologique du poumon.) G. Roussy and P. Ameuille.

73 Plastic Operation Providing New Outer Covering for Scrotum and Penis. (Technique opératoire de la génitoplastie masculine externe.) Bonamy and Dartigues.

74 Dwarf Growth from Bone-Muscle Dystrophy. L. Tixier and C. Roederer.

75 *Congenital Dilatation of the Bile Passages. (Cholangiectasies congénitales.) M. Letulle.

February 5, No. 11, pp. 101-108

76 Gaping of the Sutures of the Skull from Brain Tumor. (Disjonction des sutures crâniennes par tumeur encéphalique.) A. Broca.

77 Action of Colloidal Copper on the Blood. H. Chabanier and L. Rollin.

February 8, No. 12, pp. 109-120

78 *The Bradycardia of Lead Colic. C. Lian and E. Marcorel.

79 *Treatment of Lymphorrhea. P. Sikora.

75. **Congenital Dilatation of the Bile Ducts.**—In the case reported a young woman had always been healthy until at the age of 25 symptoms of catarrhal jaundice developed keeping up for three months with progressive debility and loss of weight. The epigastrium protruded on the median line but more on the right side, and an echinococcus cyst was diagnosed. Puncture released four liters of a fluid containing large quantities of bile pigments. The gall-bladder could not be discovered and the cyst was merely sutured to the lips of the wound. The fever kept up and the patient succumbed to a hemorrhage in the interior of the cyst pocket, the eighth day. Necropsy revealed that the trouble was a general congenital dilatation of all the large bile ducts. The gall-bladder was unusually small and crowded to one side. Conditions thus rendered extremely serious even a mild acute infection of the bile passages.

78. **The Bradycardia of Lead Colic.**—Four cases are reported of true bradycardia in the course of lead-poisoning colic. It was tested by both the graphic tracings and the atropin test. Each systole of the ventricle was preceded by a single contraction of the auricle; the heart action was thus normal although so retarded. The bradycardia was not due to unduly high arterial pressure; both were evidently symptoms of the lead-poisoning. The atropin test indicated that the acute intoxication from the lead acted on the trunk of the pneumogastric nerve and also on its terminals in the Keith and Flack node.

79. **Lymphorrhea.**—Sikora discusses the loss of lymph from injury of the thoracic duct or other lymph vessel, concluding

with the statement that when it is of traumatic origin it can generally be arrested by simple procedures, compression, cauterization of the fistula or tamponing. In exceptional cases it may be necessary to ligate the trunk vessel. When due to an inflammatory or cancerous process, treatment should be addressed to the cause.

Revue Mens. de Gynécologie, d'Obstétrique et de Pédiatrie, Paris

January, VIII, No. 1, pp. 1-72

80 *Early Rising in the Puerperium. (A propos du lever hatif des accouchées.) B. de Saint-Blaise. (Est-on autorisé à penser que la pratique du lever précoce des accouchées retarde l'involution utérine et favorise la production des thromboses et der embolies?) L. Bouchacourt.

81 *Sudden Death of Syphilitic New-Born Infants. (Pathogénie de la mort "immédiate" des nouveau-nés syphilitiques.) A. B. Laborderie.

80. Early Rising in the Puerperium.—Saint-Blaise gives the exact findings in 291 parturients the tenth day. They were all free from constitutional disease, history of old uterine trouble or instrumental delivery, or necessity for obstetric interventions, and also free from pathologic conditions in the puerperium and from abnormal conditions in the genital organs. He excludes from his review 204 other women in his service who presented some of the above morbid conditions. In the 291 clinically normal women at the tenth day the fundus of the uterus was still 9 cm. above the pubis in 80; 7 cm. in 53; 5 cm. in 73, and 4 cm. in 44. Thus 260 of the 291 had not completed the involution of the uterus. Only in 31 was the involution complete; 12 of these women were primiparae and 25 had normal lactation, but 4 of these had considerable retroversion and although 12 appeared entirely restored, yet they still had considerable losses of blood. Of the total 291 women, 112 still had considerable losses of blood; 43 dark-colored lochia, 10 fetid; only 83 had very little or no trace of hemorrhage.

Bouchacourt is convinced that keeping the women in bed with the consequent atony of the muscles and congestion in the back and pelvis is a contributing factor to the development of thrombosis and embolism later. He reports two cases in which after an absolutely normal delivery and puerperium the women died suddenly when they first got out of bed, one the eighteenth and the other the thirtieth day after the childbirth. The first patient was a woman of 26 who had had a heart murmur during this and a previous pregnancy and on this account had been kept very quiet on her back for more than a week and was not allowed even to sit up until the tenth day. The heart had been carefully supervised and showed no signs of weakness at any time. In the second case the patient was a woman of 35 with considerable varicose enlargement of the veins in the thighs and vulva at a preceding pregnancy and pulmonary embolism developed the twelfth day while the patient was still in bed, but it subsided under wet cups. At the third pregnancy there were no varices but brief transient pulmonary embolism the eighteenth day with some fever. The thirtieth day she died suddenly as she was allowed to get up. Possibly this accident might have been avoided if the blood had been rendered more fluid by prophylactic organotherapy or citric acid lemonade. He mentions a number of historical instances of similar sudden death during the puerperium, when there was no question of early rising, and remarks that two sisters of the king of Spain died suddenly under similar circumstances, one in 1904 and the other last September. He cites further statistics totaling 3,034 cases of early rising without a single instance of embolism. Klein has had no thrombosis among 2,500 women allowed to get up from the first to the third day after childbirth, and Kümmel of Hamburg reported fatal embolism in 1 per cent. of his 1,210 laparotomies 1906-07, while in the two following years, when the patients were allowed to get up early, the mortality from this cause dropped to 0.19 per cent.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

January, XXI, No. 1, pp. 1-28

82 *Mechanism of the "Sudden" Death of Syphilitic Newly Born Infants. A. B. Laborderie.

83 Technic for Examination of the Hymen. A. de Dominicis.

81-82. Sudden Death of New-Born Syphilitic Infants.—Laborderie refers to the cases in which the child has been safely delivered and all seems to be going well. Then the child is seen to be becoming cyanotic and although it can be kept alive for a time by artificial respiration yet it gradually suffocates, and nothing can be found at necropsy to explain unquestionably the fatality. Fournier ascribes it to an inaptitude for living, but Laborderie has noticed that the children in such cases always have a very much distended abdomen. He observed this in a pronounced form in eight such cases recently, and Sfameni of Cagliari has reported the same and has drawn the practical conclusion that the children might be saved by an emergency paracentesis, releasing the gas or effusion in the abdomen and thus permitting the diaphragm to make its normal excursions. All the symptoms in such cases testify to the mechanical nature of the asphyxia and indicate the serious outlook when a syphilitic child is born with an unusually large and distended abdomen.

Archiv. für Gynaekologie, Berlin

XCIX, No. 1, pp. 1-224. Last indexed February 8, p. 482

84 *Intracranial Hemorrhages in the Newly Born. (Zur Genese und Symptomatologie intrakranieller Blutungen beim Neugeborenen.) H. Abels.

85 Rupture of Amniotic Sac at Seventh Month of Pregnancy Continuing to Term. (Zur Lehre von der Hydrorrhoea uteri gravidi amnialis.) S. Gottschalk.

86 *The Blood-Changes in Eclampsia and Pregnancy Kidney and Their Importance for Treatment. (Blutveränderungen bei der Eklampsie und Schwangerschaftsniere im Gegensatz zur normalen Schwangerschaft und Massregeln die sich daraus für die Therapie ergeben.) A. Dienst.

87 Serodiagnosis of Pregnancy. (Zur biologischen Diagnose der Schwangerschaft.) M. Henkel.

88 Premature Puberty. (Vorzeitige Menstruation, Geschlechtsreife und Entwicklung.) J. Lenz.

89 Metabolism in Osteomalacia. (Stoffwechselversuche bei Osteomalacie.) L. Zuntz.

90 Toxicity of Hemorrhage After Tubal Abortion. (Giftigkeit und Gerinnungsverzögerung des intraperitonealen Blutergusses nach Tubenruptur.) R. Els.

91 Uterine Cancer After the Menopause. (Postklimacterisches Myosarkom des Uterus.) M. Ogorek.

84. Intracranial Hemorrhage During Delivery.—Abels reports two cases and comments on the resemblance of the symptoms to traumatic tetanus. Both infants had tonic convulsions, symmetrical and elicited by external influences, while there were no other appreciable symptoms of cerebral hemorrhage. The fontanels bulged a little and the fluid on lumbar puncture was blood-stained, but the most important differential feature was the way in which the spasm spread, and the absence of rigidity of the back of the neck and opisthotonos. The trismus was noticed almost immediately after birth, earlier than is the rule with tetanus, and it was intense. In the second infant, left abducent paralysis was a special feature of the clinical picture. Both infants refused to nurse and the nervous symptoms developed the second day.

86. The Blood-Changes in Eclampsia.—Dienst found on examination of the blood of forty-two women with eclampsia, six with pregnancy nephritis and thirty-five normal pregnant women, that the proportion of albumin in the blood-plasma was much below normal, the deficiency extreme in the pathologic cases. The serum globulin is lacking while the fibrinogen is found in excess. The result is a deficiency in antithrombin; this allows the blood to become overladen with thrombin, and the excess of thrombin in the blood he regards as the cause of eclampsia and pregnancy kidney. The emunctories become insufficient owing to disturbances in their circulation. This leads to the flooding of the organism with fibrin ferment and fibrinogen with consequent further damage. Prophylaxis and treatment should aim to regulate the circulation by relieving the cramp of the vessels induced by the excess of fibrin ferment. For this narcotics are needed, and this explains the benefit from Stroganoff's continuous sedative treatment of eclampsia. Venesection is also useful, relieving the stasis of blood by the sudden reduction of the blood-pressure and drawing off some of the disturbing elements in the blood. The placenta produces fibrin ferment and hence it is best to deliver the woman, without waiting too long, when it can be safely done. The longer we wait the more the kidneys are being

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injured. The kidney changes in eclampsia are by no means so harmless as generally assumed. Acid drinks promote production of antithrombin and hence are useful in prophylaxis of eclampsia and pregnancy kidney and also of postoperative thrombosis, especially after hysterectomy for myoma. The uterus mucosa seems to produce antithrombin and its removal leaves the patient unprotected against thrombosis. This view is sustained by the old experience that myoma patients are peculiarly liable to embolism.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXXXII, No. 2, pp. 291-471

92 *Cystic Disease of the Adrenals. (Zur Kenntnis und Operation der Struma suprarenalis cystica haemorrhagica.) H. Küttner.
93 *Severe Roentgen-Ray Burns. (Zur Klinik und Histologie schwerer Röntgenverbrennungen.) E. Pagenstecher.
94 Resection of the Liver. (Leberresektion.) H. Lindner.
95 *Bone Tumors of Thyroid Origin. (Knochentumoren thyreogener Natur.) K. Kolb.
96 *Thrombosis and Embolism After Appendicitis Operations. P. Bull.
97 Influence of Gastric Juices on Other Living Tissues. (Einfluss der Magensäfte auf lebende Organgewebe bei gesundem oder gestörtem Peritonealüberzug.) C. Licini.
98 Access to Spine Through the Peritoneum. (Erfahrungen über den transperitonealen Weg bei Operationen an der Wirbelsäule.) S. Jourdan.
99 The Thymus with Exophthalmic Goiter. (Zur Histologie des Basedowthymus.) R. Bayer.
100 Sarcoma of Tunica Vaginalis. (Sarkom der Scheidenhaut des Hodens und des Samenstranges.) R. Bayer.
101 Echinococcus Disease and Serodiagnosis. A. Welter and E. Sonntag.
102 *Medical Study Tour to America in 1912. H. Gebele.

92. **Cystic Adrenal Successfully Removed.**—Küttner reports a case of an extremely large blood-cyst filling the entire upper abdomen in a woman of 43 with seven children. Tests of kidney functioning revealed two ureters on each side and that all were functioning normally. The large tumor was back of the peritoneum and its removal was facilitated by tapping, releasing a quart of brownish fluid. The patient convalesced rapidly although the operation had been long and tedious on account of adhesion of the cystic adrenal to adjacent organs. He has found records of eleven similar cases in the literature, three of which were necropsy findings; the others were given operative treatment, with recovery of five of the patients.

93. **Roentgen-Ray Burns.**—Pagenstecher describes two cases and gives illustrations of one. The burn was on the abdomen and extremely painful, still 10x6 cm. in size, by the end of the fifth month. The burn was then excised down to the fascia, far into sound tissue, and the fascia freshened. The defect was covered with Thiersch flaps but healing was not complete until three months later. The pains ceased with the operation and he advises early extensive excision far into sound tissue.

95. **Bone Tumors of Thyroid Origin.**—Kalb remarks that all sarcoma-like tumors in the bones, especially in the skull, should suggest the possibility of metastasis of thyroid tissue. He recently encountered a case of the kind in an unmarried woman of 75 who had had a goiter removed seven years before. Three months ago she noticed a small tumor on the left side of her skull. As it grew in size it was assumed to be a sarcoma and was removed. It projected inward as far as outward and a patch of the dura had to be removed with it. The woman died the next day and histologic examination of the tumor revealed it to be of thyroid structure. Several small similar nodules were found in the lungs.

There had been no signs of pressure on the brain notwithstanding the deep depression in the brain substance caused by the protrusion inward of the tumor. An exploratory excision would have revealed the true nature of the tumor, and it should never be omitted in dubious cases. If it had been done in this case, an operation would not have been considered as the tumor was causing no disturbance. In the fifty-nine cases compiled by Regensburger in 1911, the site was in the skull in twenty-five; in the parietal bone in nine. There was a history of local trauma in nine cases. In one in this group a girl of 13 had a cystic tumor in the frontal bone removed; at 18 a goiter required operative treatment, and at 20 a tumor developed at the site of the operation in the frontal bone. It proved after its removal to be of thyroid structure. Cancer is spread by the lymph but this thyroid metastasis seems to occur by way of the blood. An accessible simple thyreogenic tumor should be removed as soon as possible when it can be conveniently done. If left unmolested the ultimate outcome is always fatal but the tumor grows so slowly that long survivals are possible. Thirteen patients lived a year or two, seven for two to four years and seven for from five to seventeen years. The thyroid is not invariably enlarged in these cases but it generally is. After the skull, the spine is most frequently the seat of the tumor and next the long bones.

96. **Thrombosis After Appendicectomy.**—Bull found evidences of thrombosis in 11.7 per cent. of 188 private patients after appendicectomy, and pulmonary embolism developed in fifteen of these twenty-two patients, two of whom succumbed. His analysis of the facts observed seems to demonstrate that the thrombosis is the result of mechanical factors affecting veins that are below par from varicose changes. After the age of 20 very few people are entirely free from thickening of the walls or varicose changes in some of the veins in the legs or pelvis. These veins manage to get along without trouble under ordinary conditions, but the sudden and great changes in the circulation inevitable with a laparotomy upset the precarious balance, especially when there are superposed factors such as local pressure, infection, hemorrhages, injury from the anesthetic and absorption of devitalized scraps of tissue. Postoperative thrombosis develops at the same points where thrombosis occurs without an operation and without infection. The thrombi are formed primarily of platelets, which confirms again their mechanical origin. Thrombosis from phlebitis can be followed back to the field of operation, but thrombosis of mechanical origin may develop at remote points. Bull urges careful search for thrombosis at all necropsies soon after laparotomy.

102. **Medical Impressions of America.**—Gebele compares the medical schools of America with those of Germany, saying that the students unquestionably have better opportunity here to perfect themselves in operative surgery, and the opportunities for experimental surgery are unsurpassed. He agrees with F. v. Müller that animal experimentation scientifically carried on is not brutalizing but rather deepens one's respect for the mystery of life. He regards it as a great defect in American hospitals that the medical chief of the hospital changes often, several physicians holding the office in turn. Gebele says that American surgeons can get better results than surgeons elsewhere as American patients consent more readily to an operation and thus the surgeon gets them at an earlier stage of the affection.

Berliner klinische Wochenschrift

February 10, L, No. 6, pp. 241-288

103 Surgery of the Heart. (Chirurgie des Herzens und des Herzbeutels.) L. Rehn.
104 Case of Narcolepsy. O. Klieneberger.
105 Isolated Traumatic Paralysis of Suprascapular Nerve. M. M. Behrend.
106 Paratyphoid Bacilli Not Producing Gas. W. Loewenthal and E. Seligmann.
107 Lepra Bacillus in Blood. (Leprabacillen im kreisenden Blute der Leprakranken und im Herzblute eines Leprafötus.) M. Rabinowitsch.
108 Toxic Action of Extracts of Normal Organs and Muscles. H. Aronson.
109 Biochemical Differential Diagnosis of Intoxication from Methyl Alcohol and Peptids. M. Segale.
110 Tuberculous Processes in Joints. (Gelenktuberkulose.) L. W. Ely (Denver).
111 Causes of Declining Birth-Rate. (Ursachen des Geburtenrückganges in Deutschland.) T. Pilf. (Erwiderung.) F. Goldstein.

Deutsche medizinische Wochenschrift, Berlin

February 6, XXXIX, No. 6, pp. 249-296

112 Causes and Treatment of Leukorrhea. (Ursachen und Behandlung des Ausflusses aus dem weiblichen Genitale.) S. Gottschalk.
113 Typical Fracture of the Bones in Face. (Typische Fraktur des Gesichtsschädels.) W. Körte.
114 *Prophylaxis and Early Treatment of Diphtheria. (Bedeutung und Durchführbarkeit von Prophylaxe und Frühbehandlung der Diphtherie.) W. Braun.
115 Cultivation of Germ of Tertian Malaria. H. Ziemann.

116 Trypanosomiasis with Symptoms of Sleeping Sickness. (Menschliche Trypanosomiasis mit Schlafkrankheitssymptomen aus Portugiesisch Ostafrika, verursacht durch Trypanosoma rhodesiense, und über Lumbalpunktatsbefunde, insbes. die Nonne-Apeltsche Phase 1 Reaktion, bei Schlafkrankheit.) H. Werner.

117 *Difficulties in Differential Diagnosis in Gynecology. A. Sippel.

118 Diagnosis of Bronchostenosis. O. Jacobson.

119 *Temperature of Children. (Normale Körpertemperatur der Kinder und ihr Verhalten bei Bewegung und Ruhe.) D. Fraenkel.

120 Technic for Roentgen Moving Pictures. F. M. Groedel.

121 High-Frequency Current in Therapeutics. E. F. Schurig.

122 The Support of the Foot. (Zur Frage der Stützpunkte des Fusses beim Gehen und Stehen.) F. Momburg.

123 Hypersusceptibility to Arsenic. (Beobachtungen über Arsenüberempfindlichkeit.) M. Kaufmann.

114. **Diphtheria.**—Braun emphasizes that the main point in the eradication of diphtheria lies in prophylaxis and early treatment, and that both can be effectually accomplished with comparatively slight additional expenditure. For this there should be a systematic organization of means to stamp out the disease and the entire profession should work together for this purpose.

117. **Differential Diagnosis in Gynecology.**—Sippel discusses the too facile diagnosis of hysteria to explain disturbances in the internal female genitals for which really there is some, possibly minute, organic cause. On of his patients had passed through the hands of eleven physicians and had been treated for assumed gastric ulcer, for gall-stones, neuralgia, etc., without relief and had been dismissed as a hysteric. The trouble was finally traced to an epigastric hernia in the linea alba which was readily corrected. Displacement of an ovary with venous congestion may cause disturbances ascribed to hysteria. On the other hand sound ovaries have been removed when the trouble was in the appendix or sigmoid flexure. The persistence of disturbances after the operation labels them as of hysteric origin unless the true cause is discovered. A frequently overlooked source of pain is posterior parametritis, a painful thickening and stretching of one or both sacro-uterine ligaments; this is only to be discovered by palpation, possibly only through the rectum. He has cured many of these alleged hysterics by systematic stretching of the ligaments with the colpeurynter. His experience warns expressly against diagnosing hysteria in case of pains in the female genital sphere. It is easy to distinguish between hysteric pain and pain due to an actual organic lesion by putting the patient under the influence of an anesthetic. If the pain is of hysteric origin, that is, originating in the psychic sphere, it must subside when the consciousness is shut off. In dubious cases, therefore, he induces general anesthesia until the consciousness is lost and the reflex excitability reduced. He then seeks to elicit reflex movements by acting on the painful points. If he can elicit reflex movements this shows that the trouble is a local one and not of psychogenic origin. He has found this measure of the greatest differential aid in dubious cases. Even when organic disease is recognized, it may be difficult to locate it. In one case a teratoma of the left ovary simulated gestation in the horn of the uterus. There were no circulatory disturbances in the tumor; it had the shape of a pregnant uterus and there was ossification deceptively simulating the back and head of a six-months fetus, even to a groove suggesting the sagittal suture. The diagnosis in this and in similar cases would have been facilitated if the pelvis had been raised and the examination done under general anesthesia. Raising the pelvis will be found a most valuable aid in differentiating gynecologic conditions.

119. **Temperature of Children.**—Fraenkel was surprised to find considerable fluctuations in the temperature of apparently healthy children. Exercise sent the temperature up while it declined to the normal during repose. These changes and temperature were independent of the outdoor temperature. In neuropathic children the fluctuations were greater. No difference between the behavior of the temperature was noticed between the children giving a positive or a negative reaction to tuberculin. The normal temperature during repose is seldom above 37.2 C. in the rectum. Of the 163 children examined 113 gave a positive reaction to tuberculin. The tests were made at the children's sanatorium at Borgdorf near Berlin.

Deutsche Zeitschrift für Chirurgie, Leipsic

January, CXX, Nos. 5-6, pp. 395-610

124 Fyelitis. (Zur Pathogenese und Klinik der Nierenbeckenentzündungen.) A. Lindemann.

125 Perforation of Gastric Ulcer. (Ueber das akut in die freie Bauchhöhle perforierende Magengeschwür.) A. Wagner.

126 Catgut. (Zur Katgutfrage.) P. Wolff.

127 Experimental Research on Ischemic Paralysis and Contracture. H. F. Kroh.

128 Alcohol in Surgical Sterilization. (Ueber die Alkoholdesinfektion.) Y. Ozaki.

129 Experimental Research on Surgery of Heart Valves. (Herzklappenchirurgie.) E. Schepelmann.

130 Technic for Suture of Vessels. (Neues Verfahren zur Gefässvereinigung.) S. Porta.

131 Development and Retrogression of Lymph-Nodes. (Kritische Bemerkungen zu den kritischen und experimentellen Untersuchungen über das Entstehen und Verschwinden von Lymphdrüsen.) C. Ritter.

Medizinische Klinik, Berlin

February 2, IX, No. 5, pp. 161-199

132 Non-Operative Treatment of Cancer. (Die nichtoperative Behandlung des Krebses nach den Grundsätzen des Heidelberger Samariterhauses.) R. Kafemann.

133 *Fatalities After Belt Constriction and Spinal Anesthesia. (Im Anschluss an die Momburgsche Blutleere und an Lumbalanästhesie aufgetretene Todesfälle.) C. Sternberg.

134 Technic for Examination of the Blood. (Praktische Winke zur Blutuntersuchung.) L. Zapf.

135 Decompressive Measures with Choked Disk. (Druckentlastende Eingriffe bei Stauungspapille.) R. Hessberg.

136 Atony and Ptosis of the Stomach. L. Dbqué.

137 Appendicitis from Oxyuris. (Die Wurmfortsatzentzündung ex oxyure.) H. J. Rheindorf. Commenced in No. 4.

138 Structure of Retina in Mammals. (Die Stäbchen und Zapfen der Wirbeltiere.) V. Franz.

133. **Fatalities After Belt Constriction and Spinal Anesthesia.**—Sternberg gives the details of a case of obstetric hemorrhage arrested by Momburg's belt constriction. The woman died six days later and necropsy revealed fibrinous peritonitis, old purulent endometritis and extreme meteorism. It was evident that the peritonitis was the result of the stretching of the intestines by the meteorism, and he regards this as the direct consequence of injury of the intestine from the constriction. The part of the intestine compressed and thus rendered ischemic was injured to such an extent as to entail the meteorism in the anemic patient. In six other cases death followed suddenly during or soon after an operation under spinal anesthesia with tropacocain or novocain; status lymphaticus was evident in two of the patients. Michelsson has compiled twenty-five fatalities after spinal anesthesia with tropacocain and nine after novocain, and cites statistics ranging from Hohmeier's 1:200 to Tomaschewski's 1:17,847, the average being 1:3,500. Sternberg's figures are 1:295 and 1:442 in 1,770 applications of spinal anesthesia at Brunn.

Münchener medizinische Wochenschrift

February 4, LX, No. 5, pp. 225-280

139 *Surgery of Common Bile-Duct. (Zur Chirurgie des Choledochus.) v. Hofmeister.

140 *Thyroidism and Tuberculosis. (Thyreose und Tuberkulose.) L. Saathoff.

141 *Simple Test for Urobilinogen. (Eine klinisch einfache Methode quantitativer Urobilinogenbestimmung.) Flatow and Brüneil.

142 Improved Technic for Cultivating Anaerobes. (Vereinfachung der Anaerobenzüchtung nebst Angabe eines praktisch verwertbaren neuen Kulturverfahrens.) W. Lindemann.

143 Serodiagnosis of Syphilis. (Zur Wertschätzung der Bruadel-Müllerschen Reaktion.) H. C. Plaut.

144 *Diphtheria Bacilli in the Urine. W. Beyer.

145 Indications for and Results of Tampon Drainage of Abdominal Cavity. H. Küster.

146 Sterilization of the Unfit. (Zur Frage der Sterilisierung aus rassehygienischen Gründen.) A. Hegar.

147 Lithotripsy or Lithotomy. Felber and Marc.

148 Familial Fetal Chondrodystrophy. H. Chiari.

149 Radium Loaned to Practitioners. (Abgabe von Radiumpräparaten aus öffentlichen Stationen zur Behandlung privater Kranker.) E. Schiff.

150 *Syringe Rented Instead of Sold Outright. (Ein neuer Amerikanismus in der Medizin.) F. Crämer.

151 Hematology in Service of Neurology. Naegeli. Commenced in No. 4.

139. **Surgery of the Common Bile Duct.**—Hofmeister gives the details of five typical cases to illustrate the complex and dangerous consequences which are liable with an old gall-

stone affection. These cases were encountered during the last eight weeks and they suggested some new points in technic which he thinks are liable to prove of great service. In one case the liver showed signs of incipient degeneration from the inflammatory occlusion of the bile duct; in another the gall-bladder had been entirely destroyed by secondary suppuration and an encapsulated focus of bile was found under the liver and under the small pelvis. One patient, a woman of 67, was operated on for gall-stones in the common bile duct in 1898, 1900 and 1904. Then followed cicatricial stenosis of the papilla and the symptoms required further duodenotomy, drainage of the hepatic duct and also of the common bile duct into the duodenum. There was no jaundice for over eight years, notwithstanding the presence of stones in the bile duct. He thinks that the apparent recurrence of gall-stones in this case was due to overlooking some of the new-forming calculi. He was careful to dilate systematically the papilla, which was easily done with urethra bougies after transverse slitting of the duodenum to admit the bougie. The larger sizes brought out small concrements with them, and the duct was brushed out with a gauze wick. To avoid concrement formation around suture threads, he brings one long end of each thread out through the wound, inside a drainage tube. They are thus readily removed when the threads cut through, which usually occurs in ten or fourteen days. He drains the common bile duct with a rubber tube 7 or 8 mm. thick projecting for 3 or 4 cm. into the duodenum, the other end brought out through the wound in the skin. This holds the passage open as an elastic retention bougie, while it also relieves the intestine until normal bowel movements are restored. From 100 to 150 c.c. of digestive juices were voided through this tube in twenty-four hours. The tube also permits medication and feeding without burdening the stomach. He thus gave his patient coffee, tea, brandy, milk, eggs, castor oil, etc., and reinjected the digestive juices.

140. **Thyroid Poisoning and Tuberculosis.**—Saathoff applies the term thyreosis to the group of affections for which excessive or perverted functioning of the thyroid gland is responsible. Exophthalmic goiter is a subordinate syndrome in this great group. He has been investigating, in the patients at his sanatorium for internal and nervous diseases, the connection between this thyreosis and tuberculosis. His material is unusual as it included no advanced cases of tuberculosis. In forty-five cases of pronounced thyreosis including six with exophthalmic goiter, only one was free from tuberculosis and this one had long recovered from a severe form of Basedow. Only two in the whole group had tubercle bacilli. In his forty-four tuberculous patients, nearly all men, none had symptoms of thyroid poisoning. The tuberculous infection is probably the primary but the thyroid disturbances may set up a vicious circle. His experience indicates that uncomplicated exophthalmic goiter is not accompanied by fever. It further suggests that the blood-picture which has been regarded as characteristic for exophthalmic goiter is merely the expression of the tuberculosis in the first or second stages. He made a point of applying tests for tuberculosis in all the thyreosis cases, and giving treatment as for tuberculosis. The importance of this finding is evident, as when in doubt whether to ascribe the symptoms to thyroid poisoning, the discovery of even the smallest focus of active tuberculosis will confirm the diagnosis. More than this, he exclaims, "How many patients in this class have suffered from the erroneous assumption of neuroses, neurasthenia or hysteria under these conditions; they know they are not well and yet do not seem to have any actual disease." In regard to treatment he insists that the severe forms of exophthalmic goiter, whether they are complicated with tuberculosis or not, belong to the surgeon. When the vicious circle is broken at any one point conditions may begin to right themselves. A vigorous course of treatment for tuberculosis is indicated. If this can be improved, the exophthalmic goiter may subside spontaneously. Good air, abundant food and freedom from care with change of scene for a few months often do wonders for the body, nerves and mind. In all these cases of manifest thyreosis plus tuberculosis, the latter is generally in an early stage with favorable prognosis.

141. **Test for Urobilinogen.**—The test described is based on the staining properties of chromogen, that is, urobilinogen, when in contact with p-dimethylamidobenzaldehyd. Charnes' method is to determine the characteristic stripe in the spectrum, but Flatow has found that comparison with the hemoglobin color scale answers the purpose with sufficient accuracy. The fluid is poured in a colorimeter or wedge-shaped vessel. For the color scale he uses an alkaline solution of phenolphthalein, as he describes in detail.

144. **Diphtheria Bacilli in the Urine.**—Beyer states that he found diphtheria bacilli in the urine in every one of nineteen children examined when they had supposedly entirely recovered from diphtheria. The interval at date of writing was from four to eight weeks up to fourteen weeks and in six of the eight cases in which animals were inoculated with the bacilli they proved virulent. Strict hygiene would require the isolation of the children until the urine was sterile.

150. **Medical Appliance Rented Instead of Being Sold Outright.**—Crämer comments caustically on the methods of the physicians who are pushing their "Enterocleaner." Drs. Brosch and Aufschneider of Vienna. They call their method the "subaqual internal bath." It consists of a two-way catheter with which the intestines are flushed while the patient is in a full bath. The claim is made that the differences in pressure under water are peculiarly important for flushing the bowels. From twenty to thirty quarts of water can be used to rinse the intestines in this way, they say, without any special inconvenience to the patient. The apparatus is patented and it is not sold, but merely rented to physicians who not only have to pay the rent but also to pay an additional premium for each "enterocleaner bath" given. The physician pays 80 marks on receiving the apparatus and an additional 2.5 marks for each "enterocleaner bath." Crämer calls this system of procedure "the introducing of American commercial methods into medicine," and denounces it as a serious blow to medical ethics. All the physicians with whom he has spoken unite with him in condemning such a procedure and hoping that it will find no imitators in Germany.

St. Petersburger medizinische Zeitschrift

January 28, XXXVIII, No. 2, pp. 15-28

152 Diagnosis and Treatment of Chronic Diarrhea. A. Schmidt.
153 Chronic Gynecologic Disease. (Zur Therapie chronischer Frauenleiden.) A. Bonstedt.
154 Tracheal Cough. (Ueber Trachealhusten.) M. Buch.

Therapeutische Monatshefte, Berlin

February, XXVII, No. 2, pp. 97-176

155 *Scarlet Fever. (Therapie des Scharlachs.) E. Benjamin.
156 *Autovaccine Therapy of Furunculosis in Infants. L. Harriehausen.
157 *Hygiene of Muscular Weakness in the Back. (Die Pflege des Muskelschwachen Rückens im Spiel- und Schulalter.) F. Göppert.
158 Bactericidal Action of Anion Treatment. (Ueber die biologische — bactericide — Wirkung der Anionenbehandlung.) P. Steffens.

155. **Scarlet Fever.**—Benjamin remarks that in desperate cases the disadvantages of serotherapy are outweighed by the glimmer of a hope from its aid. The antistreptococcus serum may be given in a single large dose and it is possible, he adds, that it might be supplemented by a dose of non-specific serum to enhance its action. In the acute stage of scarlet fever all our measures act only to sustain the defensive powers of the organism. The outcome depends mainly on the heart, and in applying hydrotherapy the heart must be carefully supervised. He says that the temperature should be taken morning and night for five weeks and the ears and urine examined for the same length of time. A diet poor in salt reduces the thirst and thus counteracts the tendency to edema, but no measures that he knows of will guarantee against nephritis. If symptoms indicate uremia, venesection may lead to prompt improvement especially when followed by saline infusion.

Benjamin had his attention called to the unusually mild character of scarlet fever when it occurred in children in the diphtheria ward who had been given an injection of diphtheria antitoxin. On these premises he began to inject antitoxin sys-

tematically as a prophylactic measure in children exposed to scarlet fever, and found that it almost invariably mitigated the disease, if it developed, into an abortive type. He usually injects ordinary horse-serum, inactivated at 56 C.; when this is not at hand he injects diphtheria antitoxin. The dose is between 5 and 7 c.c. Unfortunately the protection afforded lasts only from twelve to fourteen days, but it is a great relief, he says, to know that the children are thus protected during the two weeks after the first child has developed a severe form of scarlet fever. It has been his experience that the disease generally runs a similar course throughout the family, so that when the first one is mild this seroprophylaxis is not needed.

Another point he emphasizes is that patients may become infected anew during convalescence from other children in early stages in the same ward. It would be better therefore if the children could be kept apart from others in different stages of the disease. He tries to have the children kept in some neutral place for two or three weeks after the five or six weeks in the hospital. In the home, he keeps up the isolation for seven or eight weeks and then has the child kept for two or three weeks at some neutral point before returning to the family life.

156. **Autogenic Vaccine in Furunculosis in Infants.**—Harriehausen reports seven cases which illustrate the peculiar advantages of autovaccine therapy in rebellious cases of furunculosis in infants. He declares that the technic is extremely simple and takes very little time while the method is absolutely free from danger and there are no contra-indications. The charts of his cases show that no new furuncles developed after the second or third injection, while the preexisting furuncles all retrogressed simultaneously. The larger the single dose, the longer the interval should be; the first dose for adults should be about fifty million and for children about twenty million, and for infants ten million at five-day intervals, the dosage guided by the temperature, pulse, weight, appetite, general complaints and focal reactions. There are two contra-indications for adults, the menstrual period and severe diabetes. In the cases reported the infants were all much debilitated and the furunculosis had long resisted all other measures. The dosage and intervals and the underlying disease differed in the various cases but the excellent ultimate outcome was alike in all.

157. **Care of Weak Muscles in the Back.**—Göppert insists that the muscles of the back should be systematically strengthened without waiting for severe or irreparable lesions to develop. He teaches nurses and mothers to turn the infant on its stomach for a few moments in case of gastro-intestinal trouble in the first six months or later. By tickling the child it may be made to raise its head as it lies prone, and by this means it exercises the muscles in its back. This exercise often repeated, but only for a brief period each time, will be found very useful in warding off a tendency to weakness of the muscles in the back. The aim should be to have children exercise muscles other than those in the legs, and games, etc., should be promoted which realize this. The "flying dutchman," started by rowing movements, is excellent in this line, and swinging from rings. In case of severe deformity, orthopedic measures should be applied even to young infants.

Therapie der Gegenwart, Berlin

February, LIV, No. 2, pp. 49-96

159 *Diabetic Acidosis. (Diabetische Acidose und ihre Behandlung.) M. Lauritzen.

160 *Benzol in Treatment of Leukemia. (Benzolbehandlung der Leukämie.) W. Neumann. (Weitere Mitteilungen über die Behandlung der Blutkrankheiten mit Thorium X. Mit Bemerkungen über die Benzoltherapie.) G. Klemperer and H. Hirschfeld.

159. **Diabetic Acidosis.**—Lauritzen reviews his experiences in treatment of alimentary acid intoxication in diabetics, and reiterates that the patients can be kept in good condition for a longer time when they once thoroughly appreciate the necessity for keeping their food down to the ration which will keep their weight stationary. Any excess over this, especially excess of albumin, particularly meat albumin and casein, is directly injurious. The progressive tendency of the diabetes is best counteracted by this means. With mild diabetes he permits only 2 gm. albumin to the kilo of body weight with interposed periods of only 1.5 gm., or 1.5 albumin with periods of 1 gm. With very severe diabetes not more than 1 gm. albumin should be permitted per kilo of body weight, with interposed periods of only 0.5 gm. When the patients are on light work, thirty-five or forty calories per kilo are sufficient and forty-five to fifty calories on heavier work—always provided that the urine is free from sugar or contains but a few grams in the twenty-four hours. With larger amounts of sugar in the urine an allowance must be made for the loss of these calories in the sugar lost. Children must have more calories per kilo than adults. He advocates occasional vegetable days, one or two at a time, with possibly an oatmeal cure to follow, a few times during the year.

160. **Benzol Treatment of Leukemia.**—Neumann reports from Giessen a case which warns against building too high hopes on the benzol treatment of leukemia. He followed Koranyi's directions giving up to eight capsules a day, each 0.5 gm., commencing with one twice a day and increasing to two four times a day and then gradually reducing the dose. The course took thirty-six days and the leukemia was so much improved that the patient felt that she had been cured, but soon after the general health grew worse and worse, fever and diarrhea followed, with repeated epistaxis and a fibrinous and later hemorrhagic stomatitis and rhinitis, and the patient died thirty-nine days after the course of benzol. The spleen was unusually tough and the bone-marrow findings resembled the findings reported by Selling in benzol-poisoned rabbits. It seems evident that benzol is a very effectual remedy for leukemia but its use requires the greatest caution. It may be wise to drop it as soon as a distinct tendency to improvement becomes evident, without striving for a complete cure.

Klemperer and Hirschfeld regard benzol as a dangerous remedy as it caused serious injury in the animal research reported. It reduced the numbers of leukocytes but induced such severe necrosis of organs that its use in large doses in therapeutics seems dangerous. It seems wiser to try to stimulate the blood-producing apparatus with small doses. They applied the benzol in three cases of pernicious anemia in doses of 0.25 gm. twice a day. No benefit was derived in two cases in an advanced stage but in the third case there was an unmistakable curative action, but no more than is generally witnessed under arsenic. The patient was a housemaid of 23 and the abrupt onset of the anemia was paralleled by the rapid recovery.

Virchows Archiv, Berlin

January, CCXI, No. 1, pp. 1-160

161 Intoxication from the Pancreas. (Pankreasvergiftung.) L. Lattes.

162 Excrescences with Pericarditis. (Drüsenähnliche Epithelbildungen bei Perikarditis.) A. Tsiwkils.

163 Changes in the Iliac Artery in Syphilitics. A. K. Stein.

164 Lymphatic Foci in the Thyroid. (Lymphatische Herde in der Schilddrüse.) M. Simmonds.

165 Cultivation of Tissues *in vitro*. R. A. Lambert and F. M. Hanes (New York).

166 Endotheliomas of the Lymph Passages. C. Vallardi.

167 Gliomatous Neuro-Epithelioma. B. Roman.

168 Subserous Adenomyomatosis of the Small Intestine. R. de J. de Jong.

169 Sarcomas in the Pleura. Bernard.

Wiener klinische Wochenschrift, Vienna

February 6, XXVI, No. 6, pp. 201-240

170 Radiotherapy of Cancer. (Ueber chemische Wirkungen von Röntgen- und Radiumbestrahlung in Bezug auf Karzinom.) E. Freund and G. Kaminer.

171 From the Seat of War. (Kriegschirurgische Erfahrungen aus Bulgarien.) A. Exner, H. Heyrovsky, O. v. Frisch and A. Fraenkel.

172 Research on Salvarsan. (Zur Frage der Parasitotropie und Toxizität des Salvarsans—Neosalvarsans.) K. Ullmann. Commenced in No. 5.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXII, No. 3, pp. 533-818. Last indexed February 15, p. 562

173 Ossification Centers in Fetal Pelvis. (Knochenkerne des fetalen menschlichen Beckens.) I. Obata.

174 *Eclampsia an Intoxication from Excess of Syncytium Nuclei in the Blood. (Das "Syncytiopräzipitin.") M. Kiutsi.

175 Children Abnormally Large at Birth. (Riesenkinder.) F. Ahlfeld.

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176 *Causes and Management of Breech Presentation. (Steisslage.) P. C. T. v. d. Hoeven.
177 Importance of Pneumococci for Puerperal Infection. O. Bondy.
178 Sterilization of the Hands. K. Laubenheimer.
179 Cancer of the Vulva. (Erfahrungen über das Vulvakarzinom.) P. Rupprecht.
180 Anomalies in Development of Uterus. (Fehler in der Verschmelzung der Müllerschen Gänge.) F. Kermauner.
181 Transmission of Germs in Vagina to Child During Delivery. (Uebergang von mütterlichen Scheidenkeimen auf das Kind während der Geburt.) F. Noack.

174. **Eclampsia an Intoxication From Excess of Syncytium Nuclei in the Blood.**—Kiutsi has extracted a precipitating substance from the epithelial cells forming the outermost fetal layer of the placenta, lying between the decidua and chorionic villi over the layer of Langhan. This syncytium has numerous nuclei and his research seems to show that these nuclei, cast off and passing into the circulation, act like a physiologic stimulant, inducing the production of antibodies and augmenting the secretions of the ductless glands. If, however, too many of these nuclei from the syncytium get into the blood, the excess causes serious damage, injuring organs and the blood and the vascular system. Eclampsia is the clinical manifestation of a sudden and extreme poisoning of the system by an excessive amount of syncytium nuclei getting into the blood at one time. Kiutsi treated animals with syncytium and thus induced the production of an antiserum, which he calls syncytioprecipitin. Biologic tests with it confirmed the assumption that the syncytium is derived from the fetal ectoderm. His research confirms the physiologic and clinical importance of syncytiolysis and the grave danger when it surpasses normal limits.

176. **Breech Presentation.**—Hoeven analyzes the causes and mechanism of breech presentation and advises to wait until the breech presents at the vulva. As soon as this occurs, proceed at once to extract the child without further delay. Intervention before this entails an average mortality of 30 per cent. while waiting too long afterward has a mortality of 10 per cent., but acting on the above principles and delivering the child at once has a very low mortality. It was only 3.9 per cent. of the 126 children in his service and at Nancy none died of the fifty children delivered by this means. The aim is to let Nature do the work and not interfere until the moment of danger arrives, namely, when the breech is born. The child then begins to breathe and it requires immediate delivery. When the birth has proceeded spontaneously to this point the arms lie on the chest. He cites statistics to sustain the principles he advocates.

Zeitschrift für Kinderheilkunde, Berlin

January, V, No. 6, pp. 455-546

182 Case of Escherich's Pseudotetanus. O. Witzinger.
183 Research on the Pathogenesis of Digestive Disturbances. VII. (Ueber die flüchtigen Fettsäuren im Mageninhalt magendarmkranker und überfutterte Säuglinge.) K. Huldschinsky.
184 Malignant Granuloma with Recurring Fever; Pel-Ebstein Type. B. Schick.
185 *Salvarsan and Neosalvarsan in Inherited Syphilis. E. Dünzelmann.

185. **Treatment of Congenital Syphilis with Salvarsan and Neosalvarsan.**—Dünzelmann treated forty children with congenital syphilis, at the Leipsic children's hospital, for periods varying from ten days to sixteen months. The results observed from salvarsan and neosalvarsan intravenously were about the same. He thinks it a valuable treatment but further investigation is necessary in regard to dosage and methods of giving. A mixed salvarsan and mercury treatment is probably best. In poorly nourished children mercury should be given first, followed by salvarsan. Two pregnant mothers were treated with salvarsan and the infants showed negative Wassermann reaction but had some signs of latent syphilis.

Zeitschrift für Urologie, Berlin

January, VII, No. 1, pp. 1-80

186 *Hairs Apparently Growing in the Bladder. (Pseudotrichiasis der Blase und Pilimiktion.) J. Heller.
187 Congenital Stenosis of Posterior Portion of the Urethra. (Angeborene Stenosen der Pars posterior der Harnröhre.) E. Heinecke.
188 Cancer of the Urethra. (Primäres Urethralkarzinom der Fossa navicularis.) B. Ottow.

186. **Hairs Growing in the Bladder.**—The hairs in the cases described evidently belonged to a dermoid cyst, and radical removal is the preferable treatment as the hairs are liable to grow again if they are merely pulled out. In twenty-seven cases on record hairs were voided in the urine and in sixteen the hairs were found growing in the bladder or were found in concrements. Heller has compiled a total of fifty-six cases but regards six as dubious; in eleven cases a dermoid cyst perforating into the bladder was the source of the hairs. In a personal case described a man of 41 had a history of gonorrhea in youth. In 1904 he had severe but transient cystitis and nephritis with inflammation of the testicles and another attack in 1908. In 1912 there was sudden hematuria and a calculus was found and removed. It contained hairs, and two new concrements developed in four weeks on the tuft of hairs seen in the bladder. The trouble was evidently infection and perforation into the bladder of a dermoid cyst. The cases on record are tabulated for comparison.

Zentralblatt für Chirurgie, Leipsic

February 8, XL, No. 6, pp. 193-224

189 Congenital Atresia of the Intestine. (Neuer Beitrag zur Pathogenese der angeborenen Darmatresien.) H. Forssner.

Zentralblatt für Gynäkologie, Leipsic

February 8, XXXVII, No. 6, pp. 193-224

190 Estimation of Duration of Pregnancy from Histologic Findings in the Placenta. (Bestimmung der Schwangerschaftsdauer auf Grund histologischer Placentarbefunde und etwaige praktische Verwertbarkeit dieser Befunde.) J. Schottlaender.
191 Intradural Injection of Magnesium Sulphate in Treatment of Eclampsia. P. Rissmann.
192 Kidney Functioning Before the Phenolsulphonephthalein Test. E. Eichmann.
193 Treatment of Eclampsia. R. Lutz.

Policlinico, Rome

January, XX, Surgical Section No. 1, pp. 1-48

194 Bone Grafts. (Contributo sperimentale allo studio dell'infibulazione.) L. G. Gazzotti.
195 Pathogenesis of Valgus Flat-Foot. (Patogenesi del piede piatto-valgo.) C. Ghillini.
196 Process of Repair in Arteries. (Ulteriori ricerche sul processo di guarigione delle ferite delle arterie e sulla riproduzione sperimentale degli aneurismi traumatici.) A. Pignatti.

Brazil Medico, Rio de Janeiro

January 15, XXVII, No. 3, pp. 21-30

197 *Symptoms of Tuberculous Mediastinal Lymph-Nodes in Children. (A tuberculose ganglionar mediastinica na infancia.) J. M. Gesteira. Commenced in No. 2.

January 22, No. 4, pp. 31-40

198 Linguatula Serrata Found in Human Intestine in Brazil. (Nota sobre a presença da larva de L. serrata Froelich, 1789, no intestino do homem, no Brazil.) G. de Faria and L. Travassos.

197. **Tuberculous Mediastinal Lymph-Nodes in Children.**—Among the signs which Gesteira finds instructive is a slight bulging of the chest wall over the enlarged lymph-node, inspiratory effort, gorged branching veins. This latter sign, congested branching veins in the region, was present in nearly every instance in his experience, testifying to the local interference with the circulation. The side affected participates less in the excursions of the chest wall, so that the palpating hand feels a sensation as of a wave as the heaving of the chest wall lags behind on this side. Percussion gives the most instructive findings, done extremely lightly, as is always best for children. The dulness is generally found over the articulation of the clavicle with the sternum and it grows less as the percussion is carried outward, thus differing from the findings with apical disease in which the dulness grows more marked toward the outer end of the clavicle. The findings must not be confused with those of an enlarged thymus; with the latter the dulness is greatest at the upper end of the manubrium, and the triangular shape of the dulness area is also characteristic. He noticed in one case a cracked-pot sound very distinct over one side of the chest but on the side of the enlarged lymph-nodes it was scarcely perceptible. The normal respiration sounds

are exaggerated, with enlargement of the lymph-nodes in this region, and expiration is prolonged. Less common but characteristic is the unilateral reduction of the vesicular murmur, especially when associated with other signs of compression of a bronchus. Examination is facilitated by the child's bending its head forward when the back is being percussed or auscultated and backward when the front of the chest is being examined. He never encountered the sign to which Rilliet called attention, namely, a rhonchus at the point corresponding to the bifurcation of the trachea. A venous murmur above the manubrium when the head is held far back is said to be useful in diagnosis of bronchial adenitis, but he never found it in his cases. Of far greater differential importance is D'Espine's sign; this is the difference in the level at which the whispered voice is propagated to the spinous processes. Normally this is the seventh cervical vertebra, diminishing in intensity downward. When there are swollen lymph-nodes, the sound is heard to the processes of the third or fourth dorsal vertebra. He found this sign always positive when other signs indicated the adenopathy, and invariably negative in children free from intrathoracic lymphadenitis. (This sign was described in THE JOURNAL, March 9, 1907, p. 909.) Gesteira says that this technic is in constant use in Brazil and is regarded as the earliest, the most reliable and the most easily applied of all means for revealing the presence of tuberculous processes in the tracheobronchial lymph-nodes.

Semana Medica, Buenos Aires

January 16, XX, No. 3, pp. 125-188

199 Congenital Malformation of the Heart. (Enfermedad de Roger.) P. J. Garcia.
200 *Psychology of Moving-Picture Exhibitions. (Los accidentes debidos al cinematografo.) V. Delfino.
201 Mineral Waters: Natural and Artificial. (Los recientes progresos de la hidrologia cientifica.) V. Delfino.

200. **Psychology of Moving Picture Exhibitions.**—Delfino has known a number of instances of fatigue of the eyes going on to actual conjunctivitis in a number of persons after moving picture entertainments, but these troubles always have passed away under simple rest of the eyes. The fatigue of the retina is caused by the flickering from the closing and opening of the shutter. The more rapidly this is done the steadier the moving picture, and the less strain on the eyes. The location of the spectator in respect to the picture is also important from this point of view. He also cites some cases of nervous disturbances following entertainments of this kind, alcoholics and neurasthenics being liable to have hallucinations develop afterward. Another feature of these moving pictures is the way in which illusions may be generated. Professor Ponzo of Turin states that he actually felt the smell of new-mown hay in his nostrils at the sight of a hay wagon in the pictures, and smelt the ocean air when looking at a ship making its way in midocean. He also felt a brief sensation of dampness and chill when watching the pictures of a tropical rain. He and his pupils made a number of studies in this line of the association between the sense of vision and the generation of illusions. For this moving picture entertainments offer a special opportunity.

Hospitalstidende, Copenhagen

February 5, LVI, No. 6, pp. 129-152

202 Salvarsan Plus Mercury in Treatment of Syphilis. (Behandling af Syfilis med Salvarsan i Forbindelse med Kviksølv.) H. Boas.
203 Porter's Method of Correcting Faulty Position of Fetal Head. L. Slamberg.

Nordiskt Medicinskt Arkiv, Stockholm

XLV, Medical Section 2. Last indexed Oct. 26, 1912, p. 1586

204 Behavior of the Hydrochloric Acid in the Gastric Juice During Kidney Disease. (Zum Studium des Verhaltens der Salzsäure im Magensaft bei Nierenentzündungen.) C. Sebardt. (commenced in No. 1.
205 Melanosis of the Mucosa of the Large Intestine. (Melanose der Dickdarmschleimhaut.) F. Henschen.
206 *Prevalence of Diabetes Mellitus in Scandinavian Countries. (Zur Kenntnis von der Ausbreitung der Zuckerkrankheit und deren Häufigkeit in den nordischen Ländern.) K. A. Heiberg.
207 Athletics and Dilatation of the Heart. (Sport und Herzdilatation.) S. E. Henschen.

206. **Diabetes in Scandinavian Countries.**—Heiberg's statistics confirm the constant increase in the prevalence of diabetes in the last decades.

Norsk Magazin for Lægevidenskaben, Christiania

February, LXXIV, No. 2, pp. 153-288

208 Ophthalmologic Notes. (Dioptriernes anvendelighet ved enkelte og sammensatte optiske systemer.) (Brythingskoefficienterne for øiets medier.) H. Schiøtz.
209 Mortality from Tuberculosis in the Insane Asylums and Prisons of Norway. (Tuberkulosedødeligheten i Norges lukkede anstalter.) M. Sægaard.
210 *Aspiration of Milk in Nursing. (En mærkelig dødsaarsak hos et spædbarn.) J. Hjort.
211 *Danger from Explosion Gases in Mining. (Forgiftningsfarer ved minering under grubedrift.) T. Sommerfeldt.
212 *Extra-Pyramidal Paralysis. (Ekstrapyramidale motoriske affektioner.) G. H. M. Krohn.

210. **Aspiration of Mother's Milk.**—The child was a young healthy babe and by the end of two hours after suckling there was considerable cyanosis which gradually increased while the respiration seemed difficult. Under artificial respiration and stimulants the condition improved and the child slept apparently normally, the cyanosis less intense, but the condition became aggravated again during the night sleep and death followed a few hours later. Necropsy revealed the presence of milk in the lower air passages.

211. **Injury From Explosion Gases in Mines.**—Sommerfeldt refers to the injury from the breathing of gases generated by an explosion of blasting powder in a confined space. He has had a number of cases of this kind, including a mild case in his own person. He describes fifteen cases in detail and emphasizes the necessity for providing for ample ventilation after an explosion. The main reliance in treatment is on artificial respiration and symptomatic measures. The pulse becomes extremely rapid and unstable, indicating that the heart and circulation have been seriously affected, which suggests the importance of heart tonics and stimulants. The great danger from the toxic action of the gases is a sudden total loss of consciousness, liable to come on without warning and the fall may have fatal results. The condition then is very much like that of general anesthesia under ether or chloroform. The miners say they are "drunk." In one case the miner's arm was run through a support and when he dropped unconscious he hung from this support. Obstinate catarrhal affections may be left afterward in the throat and bronchi. This is evidently a sulphuric-acid poisoning. In one case the irritation from this cause would have induced fatal suffocation if an air pump had not been at hand. In his own person his pulse was 120 and as he got into bed it ran up to 160. He analyzes the symptoms and course in detail, remarking that the condition for a few days afterward is like that after a debauch.

212. **Extra-Pyramidal Motor Affections.**—Krohn discusses the motor affections from organic lesions in the central nervous system outside of the pyramidal tract. The clinical pictures may include apraxia, cerebellar disturbances, loss of equilibrium from lesions in the vestibule, and rigidity and tremor from lesions of the central ganglia or the rubrospinal tract. This latter group includes Wilson's progressive lenticular degeneration with its tremor, rigidity, dysphagia and dysarthria and the unstable psychic status. All the syndromes can be classified in three groups: peripheral, pyramidal and extrapyramidal affections, and he reports in detail two cases of the latter with necropsy and describes the mechanism involved. Paralysis agitans is a typical example, he says, of an extrapyramidal affection.

Ugeskrift for Læger, Copenhagen

January 30, LXXV, No. 5, pp. 181-228

213 Albumin in Sputum of Not Much Early Diagnostic Value. (Om Albuminstofbestemmelse i Ekspectorat.) E. Hempel-Jørgensen.

February 6, No. 6, pp. 229-290

214 Further Experiences with Absorbed Light Rays in Treatment of Internal Tuberculosis. (Behandling af intern Tuberkulose med absorberet Lysenergi.) T. Brinch.
215 Scabies. (Fnatkur ad modum Lundager.) Fiedler.